Locating outsourced and offshored production based on supply chain strategy:

Findings from Swedish fashion/trend apparel companies

LUND UNIVERSITY

Master Thesis

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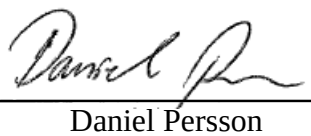
Preface

This master thesis has been conducted during the spring of 2014 in collaboration with Deloitte Consulting, Stockholm. It has been the final assignment of our educations, Master of Science in Industrial Engineering and Management and Master of Science in Mechanical Engineering, Faculty of Engineering, Lund University.

Performing this thesis has been highly valuable and educational. We have had the opportunity to work with professionals, which have pushed us to strive for better understanding and thus contributed to our work. We would like to express our thanks and gratitude to our supervisor Andreas Norrman for his guidance, wisdom and help throughout the thesis. Further we would like to thank our supervisors at Deloitte; Erik Selldin and Robin Exman; for their continuous feedback and bouncing of ideas. We would also like to thank all case companies for their participation as well as the interviewed industry experts. Finally we would like to thank our buddy Linus Schälin and everyone else at Deloitte Consulting for including us during activities and including us when going to fetch the tastier coffee on the first floor.

Stockholm, June 12th, 2014



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Abstract

Title: Locating outsourced and offshored production based on supply chain strategy: *findings from Swedish fashion/trend apparel companies*

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Background: One of the main challenges in the fashion apparel industry is combining the products short lifetimes with the complex supply chains and long lead-times. There are thus several different types of supply chains that compete differently: the physically efficient, the market responsive and the outcome-driven supply chain. These supply chains locate outsourced and offshored production differently to manage the challenges. The development in Asian low cost countries has implied higher wages and manufacturing costs. This development has affected the supply chains and decisions of where to locate production.

Purpose: The formulated purpose for this master thesis is: *"Analyze factors Swedish fashion apparel companies find important when locating their outsourced and offshored production in Europe and Asia, and its alignment with their competitive strategy and supply chain strategy".* A number of research questions were also formulated to get a more thorough understanding.

- How do Swedish fashion apparel companies' categorize their products, and are efficient or responsive supply chain strategies established for each category?
- How does the choice of supply chain strategy affect the factors?
- How has the development in LCC affected Swedish fashion apparel companies' choice of locating production?

Method: The methodology of this thesis is inspired by the multiple case study method (Yin, 2004). To answer the purpose and research questions of this thesis an interview guide was designed to conduct in depth interviews with five Swedish fashion apparel companies. As there are a large number of Swedish fashion apparel companies the outcome of the interviews should not be considered as a representative sample. Instead they should provide an indication of how companies reason

regarding the questions. The answers from each interview were first compared to the established theoretical framework and then followed by cross-case patterning.

The established framework is primarily based on Chopra and Meindl's (2004) Network Design Decision Framework. The authors' framework is used for determining location for production based on: competitive strategy, supply chain strategy, and a number of factors. This model was complemented with additional theory regarding supply chain strategies from Fisher (1997) and other factors that the researchers found interesting.

Conclusions: Our investigation showed that all five companies categorize their products, however it is only the larger companies with their own retail business who have different supply chain strategies for their categories. The larger companies bear the risk in the supply chain themselves and thus they have a cost-efficient supply chain for first orders and a market responsive supply chain for second orders. The smaller companies use a wholesale model (make-to-order) and thus don't take any risk, consequently they don't need the same level of alignment between their strategies. Generally the same factors are important for all five companies when selecting location, however the lead-time and cost factor differ among the smaller and larger companies. The conclusion being that the smaller companies with their wholesale business models don't need to reduce costs and be responsive compared to the larger companies with their own retail. The same factors are important regardless if production is located in Europe or Asia as the companies want to standardize production and ensure the same level of quality, fit etc. All case companies have experienced the development in LCC and are thus reviewing alternative locations.

Keywords: Fashion apparel industry, supply chain strategy, product categories, localization factors, low cost countries, outsourcing, offshoring

Sammanfattning

Titel: Supply chain-strategins inverkan på lokalisering av outsourcad och offshorad produktion: iakttagelser från Svenska klädföretag

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Bakgrund: En stor utmaning inom klädindustrin är att kombinera produkters korta livscykler med de komplexa försörjningskedjornas långa ledtider. Följaktligen finns det ett antal supply chain-strategier som hanterar utmaningen olika: kostnadseffektiva, responsiva och resultatdrivna som fokuserar på ett större antal aspekter. Dessa olika strategier lokaliserar outsourcad och offshorad produktion olika för att hantera utmaningarna. Utvecklingen i lågkostnadsländer har utvecklat supply chain-strategier och beslutet för lokalisering.

Syfte: Följande syfte har formulerats för examensarbetet: *”Analysera vilka faktorer svenska klädföretag finner viktiga när de lokaliserar outsourcad och offshorad produktion i Europa och Asien, samt hur dess företagsstrategi och supply chain-strategi matchar*”. Ett antal forskningsfrågor har också uppformats för ytterligare förståelse.

- Hur kategoriserar svenska klädföretag sina produkter och används kostnadseffektiva samt responsiva försörjningskedjor för respektive kategori?
- Hur påverkar valet av supply chain-strategi de olika faktorerna?
- Hur har utvecklingen i lågkostnadsländer påverkat svenska klädföretags lokaliseringsval för outsourcad och offshorad produktion?

Metod: Metoden använd för studien är inspirerad av Yins (2004) multipla fallstudie metod. För att kunna svara på syftet och forskningsfrågorna till detta examensarbete har en intervjuguide tagits fram, vilken var underlag för genomförandet av fem mer djupgående analyser av svenska klädföretag. Då det finns ett stort antal företag i den svenska klädbranschen bör därför inte resultatet av de genomförda intervjuerna ses som ett enhetligt resultat för hela branschen, utan bör istället ge en indikation på hur företag inom branschen resonerar kring dessa frågor.

De givna svaren från respektive intervju jämfördes först med det utformade teoretiska ramverket, för att sedan följas upp med en avslutande jämförelse företagen emellan för att på så sätt kunna urskilja eventuella mönster.

Det utvecklade teoretiska ramverket är primärt baserat på Chopra och Meindls (2004) Network Design Decision Framework. Författarnas ramverk används för att kunna avgöra lokalisering av produktion baserat på: konkurrensstrategi, supply chain-strategi och ett antal faktorer. Detta ramverk kompletterades sedan med supply chain-strategi teori av Fisher (1997) och ytterligare faktorer som forskarna fann intressanta för studien.

Slutsatser: Vår undersökning visade att alla fem företag kategoriserar sina produkter. Däremot är det enbart de större företagen, som bedriver egen detaljhandels verksamhet, som har olika supply chain-strategier för dess produktkategorier. De större företagen erhåller hela risken i dess supply chain själva. Dessa företag använder sig av en kostnadseffektiv strategi för dess första orders och en responsiv strategi för dess andra orders. De mindre företagen använder sig istället av en grosshandlarförsäljningsmodell (tillverkning mot order), vilket innebär att de inte själva behöver ta någon risk. Detta medför att de mindre företagen därmed inte behöver samma nivå av matchning dess respektive strategier emellan. Generellt är det samma faktorer som är viktiga för samtliga fem företag gällande val av lokalisering, däremot skiljer sig ledtid och kostnad mellan stora och mindre företag. Slutsatsen är att mindre företag, med dess grosshandlarförsäljningsmodell, inte behöver reducera kostnaden och vara responsiva i samma utsträckning som de större företagen med den egna detaljhandelsmodellen. De gemensamma faktorerna företagen emellan är viktiga oavsett om produktionen är lokaliserad i Europa eller Asien, detta då företagen vill standardisera sin produktion i så stor utsträckning som möjligt och därmed försäkra sig om att samma nivå på kvalitet och passform m.m. uppnås. Alla deltagande företag har erfarit utvecklingen i lågkostnadsländer och har därför börjat se över alternativa lokaliseringar för dess nuvarande produktion.

Nyckelord: Klädindustrin, supply chain-strategi, produktkategorier, faktorer vid lokalisering, lågkostnadsländer, outsourcing, offshoring

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1. Introduction

In this chapter an introduction to the problem underlying this master thesis will be provided. A presentation of the employer, different supply chain strategies and China's challenges as a low cost country will be presented. Further the purpose and the research questions are denoted. Finally the delimitations and the target audience of the master thesis.

1.1 Background

For decades the trend has been to outsource and/or offshore[1] production to low-cost-countries (LCC) and this trend has grown rapidly in recent years (Schniederjans and Zuckweiler, 2004). Handfield (2006) defines outsourcing as following *"strategic use of outside resources to perform activities traditionally handled by internal staff and resources"*. An industry highly depending on outsourcing is retail due to the fact that companies within the industry primarily buy already finished goods and resell them to consumers normally without transformation but with value adding activities (Holm Hansen and Skytte, 1998; Zentes, Morschett and Schramm-Klein, 2007). The retail industry is very cost sensitive due to thin margins on each product. Decisions regarding buying and sales are weighted against each other so that the most optimal financial result can be reached for the retail company (van Weele, 2010).

Production is an activity often considered not to be a core competence, thus it has historically been outsourced and/or offshored to countries that are highly productive relative to labor-costs (Bonifazi *et al.,* 2006). According to Schniederjans and Zuckweiler (2004) focusing on core competences is a strategic critical success factor of any firm for survival in the long run. According to Duning (1998) companies have to evaluate which their own specific capabilities are (e.g. R&D is often considered to be company specific), and what the capabilities of the foreign country are which they are considering to source from. Country specific capabilities for LCC in Asia are considered to be low labor- and manufacturing cost. Today, China is the largest manufacturing power in the world and represents a fifth of the global manufacturing (The Economist, 2012). China has for a long time been the world's cheapest production country, due to the combination of low wages, cheap currency and minimal regulation (Roberts, 2008). Lankford and Parsa (1999) suggests that an outsourcing decision include both advantages and

[1] Jahns *et al*., (2006) explain outsourcing as something previously produced in-house but now bought from a third party provider. Offshore is the geographical dimension and describes the relocation of a process from one country to another

disadvantages and companies thereby have to analyze and evaluate potential risk factors, such as loss of suppliers, before taking a decision.

An industry which has received much attention the last decade regarding their choice to outsource and offshore production to LCC in Asia is the fashion apparel industry. Also the emerging corporate social responsibility (CSR) awareness in this labor-intensive industry has increased the attention towards it (Fang *et al.,* 2010; Interview, Svensson. L, 2014-02-11). Corporate social responsibility (CSR) is a volunteer initiative where companies are operating their business practice in an environmentally, social and economic way. However, it is of great importance to mention that CSR should be business driven in a way where the companies themselves decide to what extent they want to work with sustainable enterprise (Utrikesdepartementet, 2013). The collapse of the Rana Plaza clothing factory in Bangladesh is one of the most recent and devastating events, which has directed strong criticism against the fashion apparel industry (The Economist, 2013). Several large North American and European brands are supplied by factories in Bangladesh and the collapse led to widespread discussions regarding CSR within supply chains. Following the collapse the monthly minimum wages in Bangladesh were increased from $38 to $68 (Paul, 2013). The country has become Asia's second largest exporter of apparel goods and exports 2013 totaled around $20 billion. As a result of the collapse several factory owners in Bangladesh said they lost sales to competitors in Vietnam, Indonesia, Cambodia and Pakistan e.g. (Interview, Company D[2], 2014-04-22).

The start of the outsourcing trend was motivated by the cost advantage compared to producing in the companies' domestic countries (Handfield, 2006). However this advantage has started to fade as the situation has changed, particularly in China where living standards have risen. In 2007 manufacturing of apparel goods accounted for 15% of China's total exported value (Chi, 2011). Low-cost sourcing in the fashion industry is a key success factor due to the cost-sensitiveness in this industry (Fang *et al.,* 2010). The primary reasons why companies in the fashion industry source and purchase internationally are cost reduction, availability, quality and large number of suppliers (Birou and Fawcett, 1992; Cho and Kang, 2001). Companies in the fashion apparel industry that historically have outsourced their production have experienced lower production costs, gained access to new technology and knowledge, which enhanced their competitiveness in the market (Cho and Kang, 2001).

[2] The five Swedish fashion apparel companies participating in this the master thesis study will be anonymous

1.2 Deloitte – A presentation of the employer

Deloitte is one of the world's leading audit and consulting companies that deliver services within consulting, tax, audit, financial advisory and risk management in more than 150 countries and with more than 200 000 coworkers. Deloitte's global network helps its clients, who operate within multiple industries, through its world-class capabilities combined with deep local expertise. This master thesis is conducted in cooperation with Deloitte Sweden and their service line Strategy and Operations (S&O) within consultancy. One of S&O's main focus areas is supply chain management and they provide a large amount of services to the retail and consumer business, which includes the fashion apparel industry (Deloitte, 2014). Our own interest alongside Deloitte's interest for the development in LCC and how the fashion apparel industry copes with it made it an exciting area to research.

1.3 Supply chain challenges in the fashion apparel industry

According to Raman (1994) the main challenge in the fashion apparel industry is combining the products short lifetimes with the complex supply chains and long lead times. Cerruti and Harrison (2006) also emphasis the high volatility in demand, low predictability and high impulse purchasing as challenges. Chopra and Meindl (2007) uses Fisher's (1997) supply chain strategies to explain two ways of handling the uncertainty in demand. Either with an efficient strategy that aims to absorb uncertainty by keeping inventory or with a responsive strategy which has the flexibility to respond quickly to meet uncertainty in demand.

The complexity of fashion apparel supply chains originates from the geographical spread as design, production of fabric, sewing and sales are often located in different countries (Raman, 1994). Forecast accuracy has historically been problematic in the fashion apparel industry as products sold during 10 weeks typically have a lead time of 1-2 years, counting from the start of design to completed production. As a result, many companies experience lost sales as availability of the products has become a crucial factor, customers today are more time sensitive and want the product immediately a "right here – right now" perspective (Christopher, 2011). Another recurring problem as a consequence of the long lead time is markdowns, when supply exceeds demand. The annual cost of lost sales and markdowns is estimated to 10-25 % of annual retail sales (Raman, 1994; Fisher 1997).

The sourcing decision is dependent on the type of product according to Leipohaimaukealoha Walsh (2008) who categorizes clothing into three different group: basic, fashion-basic and fashion/trend. Further the author explains that the type of clothing is a key factor in determining where it should be produced. Basic clothing are simple constructions of easy-care fabrics that generally are inexpensive. They are produced in large volumes, at low risk and have a low margin. These products can be found everywhere and the consumer focuses on price when choosing. Fashion-basic clothes also have a simple construction but include a fashion component (Leipohaimaukealoha Walsh, 2008). This type of product is often produced with different embellishments and colors. Based on the customers' reactions they are either included into the basic line or discontinued. Thus, these products are initially produced in small quantities, and if incorporated to the basic line production is ramped up (Leipohaimaukealoha Walsh, 2008). As they are of simple construction significant changes to the production are not needed. This is a simple way for companies to expand their product line. Fashion clothes are the most competitive and imply the highest risk for a company (Leipohaimaukealoha Walsh, 2008). These clothes respond to the latest trends, fashions and seasons, thus they have a short shelf life and production times are limited. Generally when production for these clothes are completed the retailer will not purchase additional quantities. To serve the latest trends and seasons these clothes are produced in moderate quantities. Leipohaimaukealoha Walsh (2008) stresses the importance of attaining a supplier that has the capability to produce at a high quality in a short period of time, thus the time aspect is most critical for these clothes.

1.4 Different supply chain strategies in the apparel industry

The following section describes different supply chain strategies used in the fashion apparel industry. First a more historical supply chain strategy called Quick response is presented followed by the comparison of industry leaders', Zara and Hennes & Mauritz (H&M), supply chains.

1.4.1 Quick response

In the mid-1980's a strategy within the fashion apparel industry was developed to quickly respond to shifting markets (Hammond and Kelly, 1990). It proposed a way to reduce inventory losses by cutting lead times and better coordinating the different stages of production. Reduction of lead times could be done in three ways: communication and information processing, transportation and logistics, and manufacturing. The strategy provided flexibility by capitalizing on domestic manufacturers' main competitive advantage, proximity to the domestic market. Labor-cost were increased as a

result of this strategy, however the domestic manufacturers provided higher service levels and shorter lead times than manufacturers in LCC. *"Quick response is intended to reduce overall inventory levels, increase inventory turns, and avoid forced markdowns and stockouts"* (Hammond and Kelly, 1990, p. 3).

1.4.2 Zara

A company, which has adopted a strategy similar to the quick response, is the successful Spanish based fashion apparel retailer, Zara. The company was founded in 1975 and is part of the Intidex SA Group, which includes eight separate brands, and is today the largest fashion apparel retailer in the world (Petro, 2012). Zara welcomes customers to their global network of over 1 900 stores located in 87 countries (Intidex, 2014).

The traditional apparel supply chain focuses on maximizing efficiency through manufacturing large batches, shipping large quantities and buffering with inventory with the purpose to become a low-cost producer (Christopher, 2011). Unlike this supply chain, Zara has developed a "demand chain" which understands the value that the customer seeks and produces accordingly. Two decades ago Zara introduced the idea of fast fashion which is based on a highly centralized design, manufacturing and distribution system (Berfield and Baigorri, 2013). The fast fashion strategy focuses on speed and responsiveness instead of cost. What really distinguishes this supply chain is the short time consumption required to design, produce and deliver the finished goods to the stores. The process is completed in four to five weeks compared to the traditional apparel supply chain of 1 to 2 years (Barfield and Baigorri, 2013; Christopher, 2011). Further, design modifications and replenishment of existing products is completed within 14 days. Additional features to Zara's supply chain is their choice to undersupply, production is continuously kept at a level below expected sales to minimize the amount of slow-moving or obsolete stock (Christopher, 2011). The trendiest fashion clothes account for about 50% of Zara's inventory, they are produced according to the fast fashion supply chain described above. Factories producing these clothes are Zara's own in Spain and outsourced production in Portugal, Morocco and Turkey (Bloomberg Bussinessweek, 2006; Berfield and Baigorri, 2013). However, all of Zara's products are not produced through the fast fashion supply chain. The remaining 50% of Zara's inventory consists of more basic clothing, such as basic T-shirts, sweaters and other clothing which have a more stable demand. This 50% is ordered in a similar way to the typical apparel supply chain, it is ordered six months in advance from LCC in Asia to benefit from the low labor costs (Berfield and Baigorri, 2013).

1.4.3 H&M

Another successful apparel retailer is Swedish based, H&M. The company was founded in 1947 (H&M, 2014) and is after Inditex SA the second largest fashion apparel retailer in the world today (Petro, 2012). H&M has a strong global appearance with 3 100 stores in 53 countries and with more than 116 000 coworkers. The H&M Group includes 6 separate brands; H&M, Monki, Cheap Monday, & Other Stories, COS and Weekday (H&M, 2014).

H&M has unlike Zara adopted a more efficient low-cost strategy that traditionally characterizes the apparel industry. H&M doesn't have their own factories, instead they buy its goods from approximately 800 independent suppliers around the world (H&M, 2014) and currently 80% of their production is outsourced to Asia and the rest is located in Europe (Sveriges Radio, 2013). The business idea of H&M is to offer fashion apparel and quality to the best price on each market and their product range include basic clothing as well as the latest fashion trends for women, men, youth and kids. H&M also have additional product range offering cosmetics, footwear, home furnishings and accessories. The clothing collections are created by about 160 designers, 100 pattern makers and design assistants at the headquarters in Stockholm, Sweden (H&M, 2014). H&M also has production offices that are located close to their suppliers in the different production countries and which are working both with the manufacturing facilities as well as the buyers in Sweden, to be able to check quality, reviewing samples and choosing suppliers (Petro, 2012). The company has two main collections each year, one in spring and one in fall, which have longer lead time but also several trendier sub-collections with shorter lead time products (Petro, 2012). Mostly, the trendier fashion items, with shorter lead times that are purchased in smaller volumes are produced in Europe. Children and basic clothing, with longer led-times are purchased in larger volumes from LCC in Asia (Petro, 2012; H&M, 2014). The company's lead times vary from a few weeks up to half a year depending on the specific product (H&M, 2014). Historically H&M have purchased large volumes to meet the uncertainty in demand and avoid lost sales. However, this often leads to large amount of markdowns in comparison to Zara who rather have lost-sales of an item than markdowns (Hines, 2004, p. 89).

1.5 Challenges with China as a LCC

The difference between labor costs in China and Western economies has narrowed since 2008, due to a new Chinese labor law. The Labor Contract Law that took effect on January 1st 2008 has significantly raised costs in an already tight market (Accenture 2011; Roberts 2008). The law requires companies to provide employee benefits including pensions; to guarantee

collective-bargaining rights; and to hire for the long term. The law is raising the operating expenses with as much 40% when you add increased wages in almost every sector.

"We knew it was going to be a difficult year, but no one foresaw 40% more in costs", says Willy Lin, vice-chairman of the Textile Council of Hong Kong (Roberts, 2008).

Big apparel labels are affected by the rising costs in their sourcing decisions and are looking at other low-cost regions in China's midland and to other low-cost countries in Asia, Mexico (Interview, Lindgren. B, 2014-03-20) and Africa (Interview, Emilsson. F.C, 2014-02-11). China has thereby lost its attractive cost advantage in labor, in comparison to many other countries. In 2009 the production labor rates per hour including benefits in China where $2.03, India $0.92, Indonesia $0.7 and Vietnam $0.44. But if you look at global rates, where freight cost is included, China is cheaper compared to the other countries mentioned above. The total global rate in China is $0.102/lb, India $0.129/lb, Indonesia $0.113/lb and Vietnam $0.113/lb (Kumar *et al.*, 2009). Even though the cost for labor is less by moving inland or to cheaper geographical regions, companies have to be aware of unexpected costs and additional lead time for shipping due to poor infrastructure and undeveloped supply chain. A reason for moving inland in China can also be for serving these booming cities (The Economist, 2012).

There are fast rising costs for wages in China but Chinese productivity is on the other hand also very efficient. The wages in Sri Lanka are 35-40% less than China but the efficiency is on the other hand lower. Costs for wages rose in Shanghai by 14% and by 12% in Guangdong from 2002 to 2009 (The Economist, 2012). The wages in China are forecasted to increase in 2014 by more than 10% (Bloomberg News, 2014).

Infrastructure is becoming more expensive to establish and to maintain. Government policies are favoring workers and their welfare more than ever, whereby wages are increasing, and away from only benefitting investors and manufacturers (Accenture, 2011). It's not just the cost for labor that are less reliable today also the ones for transportation is increasing. Shipment to the U.S. East Coast from Shanghai was in the year 2000 on average $3 000 compared to $8 000 in 2008. Manufacturing costs of many goods today has raised by 14 to 17% (Fang *et al.*, 2010). Currency fluctuations between the Chinese Yuan and US dollar has increased by 18.4% from the year 2005 to 2008 and 10.2% of this was between the year 2007 to 2008 (Kumar *et al.*, 2009)

Corporate social responsibility (CSR) is another factor in today's global sourcing that is getting more important. The importance of CSR in China has

increased in recent years and companies sourcing from China need to take the term in consideration and work proactively with this initiative (McKinsey, 2013; Fang *et al.*, 2010). The awareness has increased in labor-intensive China and the new labor law in China is the most prominent landmark (Fang *et al.*, 2010). Sourcing in China today is becoming more of a cost- and strategy-driven decision (The Economist, 2012). The companies with long-term strategy, high level of CSR and business ethics will retain in the country and the ones chasing the lowest production costs will consider other cheaper locations (Fang *et al*., 2010).

Global sourcing from LCC is steadily increasing but purchasing from these countries isn't just a simple matter. There are still unsolved problems and challenges to overcome for companies, which chose to source globally. Cultural difference is one of the most challenging factors, since it includes an integrated system of behavioral patterns, religion, values and manners. Also included in culture is language, which primarily is important for understanding, communicating and information gathering and problems can lead to misunderstandings and quality issues. Regulations are often complicated and can affect the sourcing both direct and indirect. The most influential regulations are quotas and tariffs. Governments, in different countries, use these regulations mainly for two reasons, to earn revenues and for protecting national producers. Additional factors affecting global sourcing are exchange rate fluctuations, intellectual property rights and economical and political stability e.g. (Perkowski, 2012; Cho and Kang, 2001; Fawcett and Birou, 1992).

1.6 Problem description

Following the challenges in the complex fashion apparel industry and the increasing challenges sourcing from China, the authors together with Deloitte find it interesting to examine how companies design their supply chains to manage these challenges (figure 1). The increasingly demanding customers and the long lead times from LCC often generate a mismatch which leads to excessive inventory to manage the uncertainty in demand (Raman 1994; Christopher, 2011). The excessive inventory lead to markdowns and obsolete products. Thus many companies within the fashion apparel industry struggle to align their supply chain to reduce inventory but maintain a high service level to the customers.

One observation of Zara's and H&M's supply chain strategies' is that their basic clothing is sourced in the same way regardless of the company's overall competitive strategy. However, the strategies for the fashion/trend clothes differ. Zara's range of fashion/trend apparel is significantly larger than H&M's and therefore Zara sources more frequently from Europe with shorter

lead times (Bruce and Daly, 2006, p. 330). Zara relies on their responsive supply chain in Europe to produce new fashion clothing in a number of weeks, in comparison H&M sources a large amount of its goods from Asia with long lead times. Thus, the focus of this master thesis will only be on supply chain strategies for fashion/trend clothing, not basic clothing.

Based on the background description the following key areas have been assembled to a model that represents the different areas this thesis focuses on (figure 1).

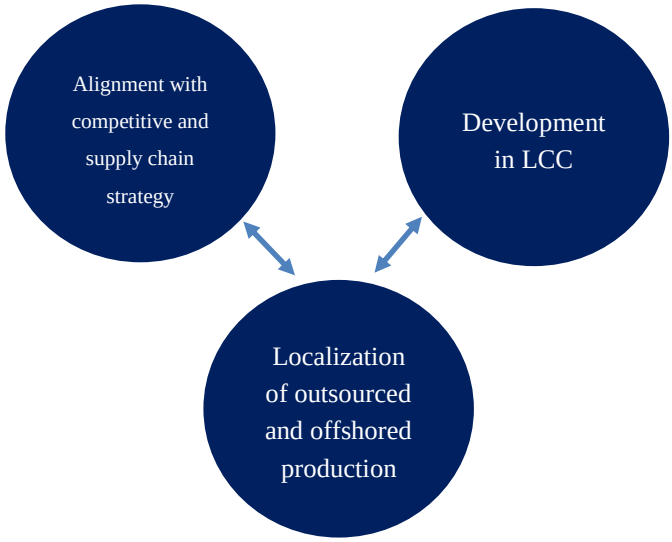


Figure 1: Areas of the study

1.7 Purpose

Based on the decreasing attraction of China and the significant differences between industry leader's supply chains, in terms of efficiency and responsiveness, the purpose of this master thesis will be to:

Analyze factors Swedish fashion apparel companies find important when locating their outsourced and offshored production in Europe or Asia, and its alignment with their competitive and supply chain strategies.

1.7.1 Research questions

Based on this purpose the following research questions have been defined:

- How do Swedish fashion apparel companies categorize their products, and are efficient or responsive supply chain strategies established for each category?
- How does the choice of supply chain strategy affect the factors?
- How has the development in LCC affected Swedish apparel companies' choice of locating production?

1.8 Delimitations

This master thesis research is limited to include Swedish companies within the fashion apparel retail industry with sales mainly in Europe. The selected case companies are primarily analyzed regarding only fashion and trendier clothes and not basic ones, based on the findings that H&M and Zara who have very different supply chains still source basic clothes in the same way. Furthermore, manufacturing located in China is primarily focused as a global perspective and Europe as a local perspective. As a consequence, the result of this study cannot be applicable on other industries within the consumer business except the fashion apparel industry.

1.9 Target audience

This thesis has three main target audiences. First, the employees at Deloitte Consulting and especially the people who have supervised this master thesis. Second, students at Lund University, Faculty of Engineering with an interest in supply chain management and procurement. Third, people who are on a management and decision-making level and/or employees within companies that are working with procurement and supply chain management with focus on fashion/trend clothing.

1.10 Outlay of the report

This master thesis consists of six major parts (figure 2) that are shortly described below.

Figure 2: Structure of the report

1.10.1 Chapter 1 – Introduction

This chapter provide an introduction to the problem underlying this master thesis. A short presentation of the employer, different supply chain strategies with two well-known examples and challenges with China as a low cost country will be explained. Further the master thesis' purpose and the research questions are denoted. The first chapter ends with the delimitations and the target audience of the master thesis.

1.10.2 Chapter 2 – Methodology

This chapter will provide an overview of research and reasoning approaches and the chosen methodology for the master thesis. The characteristics of the case study design and method are discussed. Further the chapter describes

the selection process, how case studies are conducted and analyzed as well as quality and validity of the research.

1.10.3 Chapter 3 – Theoretical framework

This chapter will provide an introduction to the theory used throughout the master thesis. First theory regarding competitive and supply chain strategy and their alignment will be discussed. Second factors underlying localization decision for production is presented. Thereafter factors derived from offshoring and the development in low cost countries discussed. The chapter ends with an adjusted version of the master thesis investigation framework model that is presented in chapter one.

1.10.4 Chapter 4 – Empirical study

This chapter will present the five Swedish fashion apparel companies selected for the case study performed in this master thesis. The case companies are thoroughly described regarding general information, supply chain, product mix, planning cycle, outsourced and offshored production. Further a number of factors influencing production location (explained in chapter three) and the companies' future sourcing perspectives are described.

1.10.5 Chapter 5 – Analysis

This chapter will analyze and compare empirical findings to the theoretical framework from chapter three. In addition to the comparison of theory and reality, the comparison between the case companies and what factors they find important when locating offshored production will be presented.

1.10.6 Chapter 6 – Discussion/Conclusion

In this chapter the key areas of the developed model are discussed by extracting and summarizing finding from the analysis, which culminates into answers to the research question and purpose of the thesis. Finally suggestions for further research within the field is presented along with the authors' personal reflections regarding the thesis.

2. Methodology

This chapter will provide an overview of research and reasoning approaches and the chosen methodology for the master thesis. The characteristics of the case study design and method are discussed. Further the chapter describes the selection process, how case studies are conducted and analyzed as well as quality and validity of the research.

2.1 Approaches to research methodology

The way we perceive reality can often be described in two different approaches of research methodology:

- Positivism
- Hermeneutics

Depending on which view characterizes the researcher, the approach and structure of the methodology will differ significantly. These approaches are often considered to have radically different views on mankind, the world, philosophy, science and how knowledge is defined (Patel and Davidsson, 2011, p. 25).

2.1.1 Positivism

The positivist view is commonly used in scientific research. Positivism was founded in the mid-1800s by Auguste Comte, who argued that it was possible to produce knowledge which was positive for mankind. The approach is based on the use of formal logic and facts from research based theory. One main thought behind positivism is that the knowledge which is used should be real and accessible to our senses (Eriksson and Wiedersheim-Paul, 2006). Using empirical studies the researcher aims to formulate hypotheses and find characteristics of the studied object which recur in the theory and in similar cases. Thereby the researcher confirms or rejects the hypothesis. Positivism is often criticized for not providing new knowledge to society because of the way it is used to reassure existing knowledge. Furthermore positivism is criticized for simplifying the world, as all processes can be regarded as either: psychological, chemical or physical events (Patel and Davidsson, 2011). The positivist approach is often associated with an objective quantitative and statistical analysis (Eriksson and Wiedersheim-Paul, 2006, p 81).

2.1.2 Hermeneutics

"Hermeneutics can be described as positivisms exact opposite. Hermeneutic can be simplified as the theory of interpretation, where one studies, interprets

and thereby tries to understand the emergence of mankind" (Patel and Davidsson, 2011, p 28). Unlike the positivist view, the hermeneutics view does not aim to confirm past phenomena but instead try to understand the world by interpreting the human in present. The hermeneutics approach is often associated with a qualitative understanding which is subjective (Eriksson and Wiedersheim-Paul, 2006, p. 81).

2.2 Research strategies

There are three different research strategies widely used when conducting studies (Yin 2004; Patel and Davidsson 2011). An explorative study is often used when the existing theory and knowledge within an area is limited. The explorative study is used to increase the knowledge as much as possible for a given phenomenon/area (Patel and Davidsson, 2011, p.13). The new information is seldom used as theory for a study, instead it gives an insight into the phenomena which helps refine the problem and formulate hypotheses for further studies. Historically the case study has been viewed as a tool for conducting exploratory studies (Yin, 1994). Other types of studies are the descriptive and explanatory.

The descriptive study is used when a study aims to analyze the characteristics of a given phenomenon, for which there is existing data and models. It's a describing approach which answers "what" questions rather than how/why/when questions. The study if often limited to a specific number of characteristics which are detailed and thoroughly done (Patel and Davidsson, 2011, p. 13).

The explanatory study is used when there is more extensive knowledge and theory considering the given phenomena (Patel and Davidsson, 2011, p. 13). Based on the existing theories hypotheses can be designed and tested. *"Hypotheses testing assumes there is a significant amount of theory and information in order to derive assumptions regarding conditions in reality"* (Patel and Davidsson, 2011, p. 13). The hypotheses are tested by identifying pattern among the collected information/data.

Despite these historical views, Yin (1994) suggests that case studies can be used in all three studies. Other commonly used research strategies are: surveys, histories and experiments. According to Yin (1994) the lines between when to use one strategy or another are not always clear and sharp, thus the author stresses the importance of avoiding gross misfits instead of determining a definite strategy for each type of study.

2.2.1 Choosing strategy

When distinguishing the different research strategies Yin (2004) has found COSMOS Corporation's three conditions useful, shown in table 1. They are:

1). What type of research question
2). Extent of control an investigator has over actual behavioral events
3). If the strategy focuses on historical or contemporary events.

Table 1: Different research strategies, Yin (1994)

Strategy	Form of research question	Requires control over behavioral	Focuses on contemporary
Experiment	how, why	yes	yes
Survey	who, what, where, how many, how much	no	yes
Archival analysis	who, what, where, how many, how much	no	yes/no
History	how, why	no	no
Case study	how, why	no	yes

The first condition being the form of the question has two significantly different questions, "what" and "how". A "what" question can often be linked to an exploratory study which aims to increase understanding for the further development of hypotheses and propositions (Yin, 1994). Yin (1994) exemplifies with the following question: "What are the ways of making schools effective?". To answer this type of question any of the five strategies can be used. However, "how many" and "how much" questions are advantageously answered with a survey or archival analysis (Yin, 1994).

The other main questions being "how" and "why" are of more explanatory nature and therefore Yin (1994) suggests the usage of experiment, history or case study strategies. A difference in the nature of the "how" and "why" questions in comparison to the "what", "where", "how many" and "how much" questions, is the expected outcome. The later often aim to present quantitative data whereas the first mentioned investigates the reasons behind the phenomenon.

Yin (1994) stresses the importance of defining research questions, and believes it is the most important step in a research study. The questions need

to have substance and the researcher should thoroughly investigate if a "who", "what", "where", "why", or "how" question is suitable for the studied subject. As this thesis aims to investigate how a company locates their outsourced and offshored production based on their supply chain strategy for fashion/trend products we believe the case study method will give us a thorough understanding for how companies make this decision. According to Gammelgaard (2004) case studies within the logistics, operations and materials handling area is an emerging trend and strengthens our decision to use the case study method.

2.3 Case study design

Before any data collection is performed, a decision has to be taken whether a single-case study or a multiple-case study is required to address the research question (Yin, 2004). In addition to determining the appropriate case study, it has to be determined if there is a single unit of analysis or multiple units of analysis.

2.3.1 Unit of analysis

The unit of analysis can be explained as the level of the case (Yin, 1994). In classic case study the unit of analysis is often said to be a single individual. However today the unit of analysis can be defined as almost anything which is to be studied. The unit of analysis can often be extracted from the purpose of the study and the research questions, however if the research question(s) are too vague or numerous it can be hard to define the unit of analysis (Yin, 1994). For this master thesis the unit of analysis are the factors which Swedish fashion apparel companies find important when locating production. These factors will be analyzed for each case company in combination with what competitive and supply chain strategies they use for fashion/trend clothes.

2.3.2 Single or multiple case-study

There are critics against the single-case study, saying each studied object is just an observation and therefore a large number case studies are required to present meaningful data (Ellram, 1996). However, the single-case study is analogous to a single experiment and a thoroughly conducted case study which is based on a well-formulated theory is considered to produce meaningful data (Ellram 1996; Yin 1994). The single-case study produces particularly meaningful data when it tests a well-formulated theory with a critical case (Ellram 1996; Yin 1994). As the theory has specified a clear set of propositions at a certain circumstance there might be few cases which meet all of the conditions. To confirm, challenge or extend the theory the single case which meets all conditions can be used (Yin, 1994). *"Overall, the single-case design is eminently justifiable under certain conditions – where the case*

represents a critical test of existing theory, where the case is a rare or unique event, or where the case serves a revelatory purpose" (Yin, 1994, p. 44).

Unlike the single-case study the multiple-case study seldom investigates an area which is rare and critical, instead the multiple-case study uses several cases to produce evidence which is often considered to be more compelling and increases the robustness of the study (Herriott and Firestone 1983; Yin 1994). As the single-case study can be compared to a single experiment the multiple-case study can be compared to multiple experiments.

Yin (1994) explains there are two different logics multiple-case studies often are associated with. However, only the replication logic should be used for multiple-case studies. This logic considers each case to be an experiment, compared to the sampling logic, which considers each case to have the role similar to a respondent in a survey. A clear difference between the replication logic and the sampling logic is that the later one assumes the number of subjects to represent a larger pool of respondents and therefore the derived data is assumed to be collected from the entire pool (Yin, 1994). When using the replication logic the research cannot be too specific or in depth in order to generalize the findings. With a multiple case study the researcher's ambition is to generalize the theoretical propositions and not generalize a population with statistics (Ellram, 1996). Yin (1994) explains a number of reasons why the sampling logic would be a misfit is used in case studies:

- Generally case studies are not used to predict the likelihood of a phenomenon occurring
- The sampling logic requires the study to cover both the phenomenon and it's context, resulting in a large number of variables which would require a impossibly large number of cases
- Many topics would not be able to be empirically studied, as the number of cases and relevant variables would be to large

The first underlying view in the replication logic is a research design based on the prediction that the result is the same for each of the cases. Replication is said to have taken place if similar results were derived from all of the cases. The second view is when the researcher want's to show contrasting results based on predictable reasons (Yin 1994, Ellram 1996). When using a multiple-case study the cases are selected so they either *"(a) predict similar results (a literal replication) or (b) produce contrasting results but for predictable reasons (a theoretical replication)"* (Yin, 1994, p. 46). When conducting a literal replication typically two or three cases are used. The theoretical replication can be used to show two different theoretical patterns, thus it requires a few more cases (four to six). If those cases show the

predicted outcome, several more cases can be conducted to increase the robustness and contribute as compelling support to the study (Yin, 1994).

As the obtained theory, and description of industry leaders' supply chains, suggest that companies can have different supply chain strategies depending on type of clothes believe the multiple-case study, with a theoretical replication, is advantageously used to display these differences. According to (Yin, 1994) a theoretical replication should use four-six cases, thus five case companies have been used for this study.

2.4 Case study method

Yin, along with Bateman and Moore (1983), present a method, for conducting multiple-case studies with a replication method (figure 3).

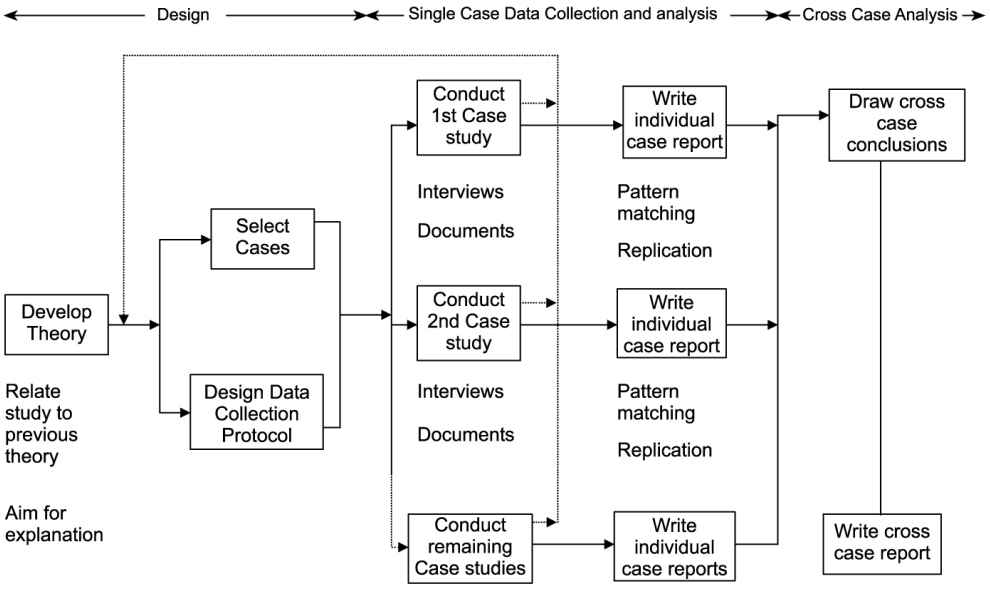


Figure 3: Multiple-case study method, Yin (1994)

2.4.1 Develop theory

One of the most important steps in the case study method is the development of a theoretical framework (Yin, 1994). The theoretical framework defines which conditions the studied phenomenon is found in. *"The theoretical framework later becomes the vehicle for generalizing to new cases"* (Yin, 1994, p. 46). If the conducted cases do not work as predicted modifications must be made to the theory. The theoretical framework explains the main things to be studied, key factors, constructs or variables, and the presumed relationships between them (Voss *et al.*, 2002). Developing a framework compels the researchers to be careful and selective when deciding what factors and variables to include in the study. The initial framework is the starting point for the vital step of designing the initial research question

behind the proposed study (Voss *et al*., 2002). The initial research question can be uncertain, however it is important to have a well-defined question as soon as possible to increase the accuracy of the collected information. A more specific and stronger research focus will simplify the identification of potential cases and the design process of research protocols. Over time the research question(s) can be modified to allow the development of more knowledge, rather than holding on to one fixed question.

Theory for this master thesis[3] was mainly found in books and scientific journals in the fields of supply chain management and production management. The foundation of our theoretical framework is Chopra and Meindl's (2004) network design decision framework. This framework was used as it focuses on how the competitive strategy and supply chain strategy in combination with a number of factors influences the location of production/suppliers. Additional sources were used to complement this framework.

A number of interviews with industry experts and researchers were conducted early on in the process. Interviews were conducted with the following people: a CEO of a smaller textile profiling company, a researcher at Lund University, a researcher at Chalmers University of Technology, and a representative from The Confederation of Swedish Enterprise. With these interviews the authors primarily aimed to increase their knowledge about the fashion apparel industry. Further, the interviews also gave insights to relevant theory and interesting aspects to consider for the thesis.

2.4.2 Select cases

As discussed in previous sections, a multiple case study will be conducted to display differences or similarities between what factors companies' find important when locating outsourced and offshored production, and how this is aligned with their supply chain strategies for their fashion/trend products. Voss *et al.,* (2002) mention several advantages with the multiple case study: it increases external validity and reduces observer bias. When selecting cases it is also important to determine whether to use longitudinal or retrospective cases. Longitudinal cases or current cases are performed to analyze present happenings. This type of case often explains cause and affect very well as they observe it as it happens. Retrospective cases are more controlled as cases can be selected based on historically actions (Voss *et al*., 2002). This master thesis will use retrospective cases, thus it will analyze how different case companies have located their suppliers. However, the cases can have

[3] The used theory is found in section 3.1

elements of longitude cases as the cases might explain how they are planning to work with the location of supplier in the future.

When using the multiple case study method the selection or sampling of cases is a vital step in the process (Voss *et al*., 2002). According to Miles and Huberman (1994) there are two steps to take when sampling. First boundaries must be established that define what can be studied and directly connected to the research question. Secondly, a sample frame should be created to help discover, confirm or qualify the constructs or processes that characterizes the study. *"When selecting cases it is also important to consider what the parameters or factors are that define the population and are to be hold constant across the sample"* (Voss *et al*., 2002 p. 204). As described in earlier sections the replication logic either aims to produce similar results between the cases or produce contrary results but for predictable theoretical reasons.

Miles and Huberman (1994) suggest a number of practical questions which have been used when selecting the cases for this master thesis:

- Is it relevant to the conceptual frame and research question?
- Will the phenomena to be studied appear? Can they appear?
- Is it one that enhances generalizability?
- Do the cases have different characteristics that highlight the differences to be studied? Is it feasible?
- Is it ethical in terms of informed consent, potential benefits and risks and relationships with informants?

A number of parameters have been established that defined the population, and each case had to meet these requirements. The first criteria being that the case companies had to be *active in the fashion apparel industry*. The second criteria was that they have *outsourced production in China and Europe*. The third criteria focuses on the company's markets, *their largest markets should be located in Europe*. The fourth criteria being that the case companies should have *products which are affected by seasonality and trends.* The criteria are explained in more detail below.

2.4.2.1 Different types of companies active in the fashion apparel industry

This criterion is vital as our purpose and research questions are directly linked to the fashion apparel industry. Based on a study conducted by Tillväxtverket (2013), they identified 17 000 Swedish fashion apparel companies, were the largest proportion of the Swedish fashion industry turnover of 206 billion SEK (60% export and 40% domestic) is generated by retail trade and wholesale (86%). This displays the vast amounts of fashion apparel

companies registered in Sweden. These range from local sole proprietors to large global groups. When selecting cases the authors wanted to achieve a mix of companies which compete differently and thus might have different supply chain strategies, as the theory suggests. This mix was primarily achieved by selecting cases base on two dimensions: the companies total revenue and products degree of design, figure 4. Having design as a dimension is due to the fact that Lee (2003) suggests that more innovative products have a different supply chain than functional/basic products[4]. When determining if a case company's products have a low or high design the authors mainly looked at their retail price and the channels they are sold through. The motivation behind having revenue as a dimension has to do with the volumes they sell. The classification of high or low revenue is based on the revenue comparison among the case companies and not the revenue compared to the apparel industry. Larger volumes tend to be sourced using a cost-efficient supply chain according to the theory and smaller volumes use market-responsive supply chains.

		Revenue	
		Low	High
Design	Low		(Basic)
	High	(Innovative)	

Figure 4: The dimensions when selecting case companies

2.4.2.2 Source from China and Europe

Following the introduction of quick response and the two fashion apparel companies Zara and H&M it suggests that sourcing from Europe and China can be done in different ways. In 2012 the Swedish apparel industry imported clothing worth 8.3 billion SEK from China (The Swedish Embassy in Beijing, 2014). Sourcing from Europe and China are likely done of various reasons and the authors want to analyze if different factors are important when sourcing globally or locally. Thus, the case companies should have outsourced and offshored production in both Europe and Asia.

2.4.2.3 Largest sales market is located in Europe

Many companies who source from China do it from a strategic perspective, they want to establish themselves on the Chinese sales market. When that is the pursued strategy they will less likely consider sourcing from Europe as they will move further away from the pursued market. Thus the case companies were selected on the fact that their largest sales market is located in Europe.

[4] Lee's (2003) theory of supply chains for innovative and functional products is found in chapter 3.1.2

2.4.2.4 Products affected by seasonality and trends

As displayed in the introduction of Zara and H&M, one of the main differences between them is the time it takes for them to introduce new products on the market. The difference in time is primarily affected by the type of supply chain they have. Thus the case companies need to have products which can be considered to be affected by seasonality's and trends. Basically this balance is determined if they have a number of collections during one year.

2.4.2.5 Chosen cases

Given the established criteria there was a large amount of cases. When contacting companies to participate in our research the authors did it through two channels. One channel being previous reports, such as bachelor and master theses, done in the fashion apparel industry. Companies who have participated in other reports are likely to be more accessible. The second channel of potential case companies was with already established contacts through Deloitte Consulting. A short description of each case company and how they met the criteria is summarized in table 2.

2.4.3 Design data collection protocol

When conducting case research the main purpose is to create a detailed understanding of the studied phenomena. This is primarily done by collecting primary data through structured interviews. As a complement to the structured interviews secondary data can be collected through different types of reports which the case companies themselves have released or are a part of. The data collection protocol's core is the questions which are to be used in the interviews (Voss *et al*., 2002). Further the authors describe that the protocol states which areas the study will cover, what questions will be asked, and if any specific data is required. When conducting multiple case studies it is important to have a well-designed protocol to increase the level of external validity as all respondents are asked the same questions. Bell (2005) suggests that qualitative data can be collected through three different types of interviews: structured, semi-structured, and unstructured. Structured interviews have questions with fixed alternative answers. The answers are categorized, which simplifies the process of summarizing and analyzing the interviews. Unstructured interviews use questions that are open and formulated in a way which can be interpreted different depending on who is interviewed. All respondents are asked the same questions when conducting a semi-structured interview, however it gives the opportunity to open more in-depth answers. The interviews conducted for this study were of semi-structured nature (appendix A).

The questions used during the interviews were formulated to cover the different areas of the theoretical framework. The interview guide was constructed according to the funnel model format. *"This starts with broad and open-ended questions first, and as the interview progresses the questions become more specific and the detailed questions come last"* (Voss *et al*., 2002, p. 205). The initial questions focused on the company itself. Thereafter the focus was on the supply chain strategy. Finally more specific questions regarding how the case company reasons around a number of factors when choosing where the outsourced production should be located.

Table 2: Description of case companies

Company	A	B	C	D	E
Company size	Small	Small	Large	Large	Small
Product characteristics	• Innovative design • High quality	• High quality • Simplicity	• Broad assortment • Quality	• High quality	• Characteristic design • High quality and fit
Price segment	Upper mid-price	Upper mid-price	Lower mid-price	Mid-price	Upper mid-price
Largest market is in Europe	1. Sweden 2. Germany 3. Denmark	1. Sweden 2. The Nordic 3. Germany	1. Sweden 2. Norway	1. Sweden 2. Finland 3. Norway	1. Sweden 2. Holland 3. Norway
Source from Asia and Europe	• 65% from Asia • 35% from Europe	• 36% from Asia • 64% from Europe	• 73% from Asia • 10-15% in Europe	• 57% from China • 47% from Europe and Asia	• 82% from Asia • 18 % from Europe
Distribution channels Own retail Wholesale					

2.4.4 Conduct case studies

2.4.4.1 Contact

The purpose of this study focuses on questions of strategic and tactical nature. Thus the authors considered it appropriate to interview respondents' with an executive position. The authors chose to specify the respondents to supply chain managers, production managers and purchasing managers. These respondents could provide us with both the overall strategic answers but also give specific answers regarding where outsourced production is located and the reasons behind it.

2.4.4.2 Conducting interviews

All five interviews were conducted at the companies' headquarters with one representative from the company, in one case there was two representatives. Three of the interviewees were supply chain managers, and one of them had recently become CEO of its company. Two interviewees were production managers and the final interviewee was a key account manager. Based on the number of questions in our interview guide and to avoid stressing through the interviews the authors believed two hours was appropriate for each interview.

Based on Eisenhardt's (1989) thoughts about the benefits of using multiple investigators the authors decided that both would attend all five interviews. Multiple investigators can enhance the creative potential and the convergence among the interviews increases and thus also the confidence in the findings. The interviews were structured in the way that one of us took the lead interview role and the other the lead data collection role.

All interviews except one was conducted without using a tape-recorder. The reason for using a tape-recorder for that interview was because both of us could not be present. Thus it is difficult for one person to have both the lead interview and lead data collection role simultaneously. The authors believed that our questions were formulated in a way which would allow us to get specific answers for each question. In addition the authors also though the presence of a tape-recorder could inhibit the interviewee from speaking freely. Using a tape-recorder is also very time consuming as the interviews have to be transcribed afterwards.

In addition to the interviews some of the interviewees were contacted afterwards for complementary information. The authors were also provided with different reports and documents to complement the interviews, such as annual reports and sustainability reports.

2.4.4.3 Write individual case reports

The first step after conducting the interview is writing up each case. Advantageously this should be done as soon as possible after the interview to maximize recall and filling in gaps of data through follow-ups (Voss *et al.*, 2002). Thus, a draft of each interview was written the same day as the interview. All of the cases were written in same way with the same structure. The structure of the cases is similar to the structure of the interview guide which has a funnel model format. This will help the reader understand the similarities or differences between the cases and simplify the analysis process.

2.4.5 Analyze and conclude

Yin (1994) explains the importance of having a general analytic strategy in place before starting to analyze the empirical evidence. The first general strategy being, relying on theoretical propositions. Simplified this strategy means the analysis should be built on the original propositions of the studied area. The obtained theory will help guide the case analysis and focus on certain data and ignore other data. The second general strategy is, developing a case description. This strategy focuses on developing a descriptive framework for organizing the case study (Yin, 1994). Writing individual case reports can be compared to the first of two steps which Eisenhardt (1989) suggests when analyzing case data. The first step is to analyze data within the cases and the second step is to search for cross-case patterns.

2.4.6 Analyze data within cases

A common starting point when analyzing each case is to construct an array for displaying the data (Miles and Huberman 1984; Voss *et al.*, 2002). The array can be of very simple design (appendix B). Visually displaying each case systematically helps the researcher become intimately familiar with each case and help draw valid conclusions (Eisenhardt, 1989). The areas in the array represent the major areas explained in the theoretical framework. With the array Miles and Huberman (1984) suggest the researcher starts looking for explanation and causality. Further the authors present three different ways of doing this. First the case dynamics matrix, which traces the processes and outcomes for a set of factors for change. The second way of analyzing the data is making predictions and using the case data to test them. The researcher should than analyze what evidence supports the predictions and what evidence does not support the predictions. The third method is a casual network. Simplified this method displays the most important variables and the relationships between them. For this master thesis the authors wanted to compare the case companies' strategies with the theory and analyze how they have reasoned regarding the different factors the authors have observed (figure 5).

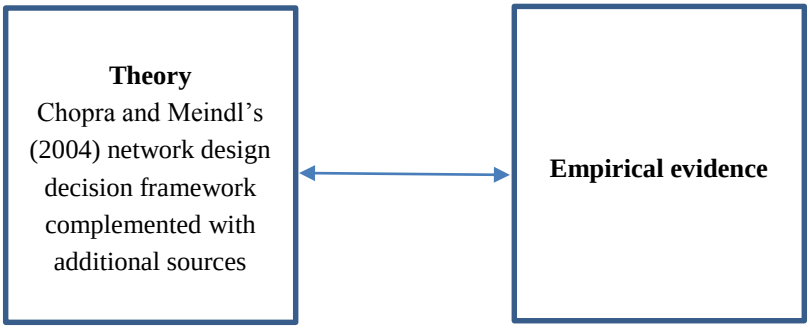


Figure 5: Comparison of theory and empirical evidence

2.4.6.1 Cross-case patterns

The array used in the previous step provided an overall picture of each case and helped the search for similarities, relationships and differences among the cases. *"The systematic search for cross-case patterns is a key step in case research. It is also essential for enhancing the generalizability of conclusions drawn from cases"* (Voss *et al*., 2002, p. 214). The search was done by using the arrays in the previous step and systematically comparing the empirical evidence for one cell at a time. The selected case companies could all be placed into two different categories (see figure 4) as they were similar regarding both revenue and type of products and business model. Each of the two categories were analyzed internally then the two categories were compared to analyze the differences.

2.5 Quality and validity of the research

Yin (1994) explains four tests to establish the quality of any type of empirical research. Further the author has developed several tactics to deal with these four tests when conducting case study, these tactics are spread out over the entire case study, not just in the beginning. Kidder and Judd (1986) have summarized the four tests for assuring quality and validity for any research:

- *Construct validity:* establishing correct operational measures for the concepts being studied, and assures the validity of the inferences that observations actually represent
- *Internal validity:* reflects to what degree of validity a causal conclusion based on the study is, deals with spurious relationships
- *External validity:* to what degree a study's conclusions can be generalized
- *Reliability:* shows that the operations of the study are replicable and the same results would be reached if the study would be repeated

To ensure a high level of validity for this thesis the authors have continuously worked with Yin's (1994) different tactics (table 3).

Table 3: Reliability and validity, Yin (1994)

Test	Case study tactic	Phase of research in which tactic occurs
Construct validity	Use multiple sources of evidence	Data collection
	Establish chain of evidence	Data collection
	Have key informants review draft case study report	Composition
Internal validity	Do pattern matching or explanation bulding or time-series analysis	Data analysis
External validity	Use replication logic in multiple case studies	Research design
Reliability	Use case study protocol	Data collection
	Develop case study database	Data collection

Further the authors have performed the following activities to ensure the validity and reliability of this master thesis. First a well-structured interview guide was constructed, see appendix A. The interview guide was well-structured to ensure each case company was asked the same questions and thus the data collection could be replicated. Also a structured array was used to analyze the data from each case company in the same way. The authors' choice not to use tape-recorders can affect the reliability negatively, thus the interviews cannot be accessed again and the analyses are based on the written data from the interviews.

The internal validity of this thesis is strengthened by the thorough and well-known sources used to formulate the theoretical framework. This framework was later used to construct the interview guide and perform pattern matching among the case companies.

Sending draft case reports to the case companies and supervisors to review were efforts to increase the construct validity of this thesis. This is a tactic that Yin (1994) discusses.

Achieving a high level of external validity is dependent on aspects such as: random sampling and proper sample size (Mentzer and Flint, 1997). The case companies for this thesis were randomly selected, however they do not constitute a representative sample of the entire fashion apparel industry. Using Yin's (1994) replication logic in the multiple case study was also an attempt the increase the external validity. The external validity is however negatively affected by the choice to only use case companies with high revenue/low level of design and low revenue/high level of design. The study is replicable, however the results are not generalizable as the same type of

companies would still be a too small number to represent the entire fashion apparel industry.

3. Theoretical framework

In this theoretical chapter we will discuss 4 key areas, which have been used to build our theoretical framework. The areas originate from the established model in the problem description. First theory regarding competitive strategy and supply chain strategy and their alignment will be discussed. Thereafter factors behind localization will be presented. Also factors derived from offshoring and the development in LCC will be presented. Finally an adjusted version of the model in the problem description, based on the theoretical findings, is presented that will be our investigation framework.

3.1 Strategic alignment and fit

Before establishing where production should be located and considering which factors should affect that decision (see section 3.2), a competitive strategy and an aligned supply chain strategy have to be formulated. This section will focus on the first phase of Chopra and Meindl's (2004) *Network Design Decision Framework.* This phase will be complemented with additional theory regarding supply chain strategy.

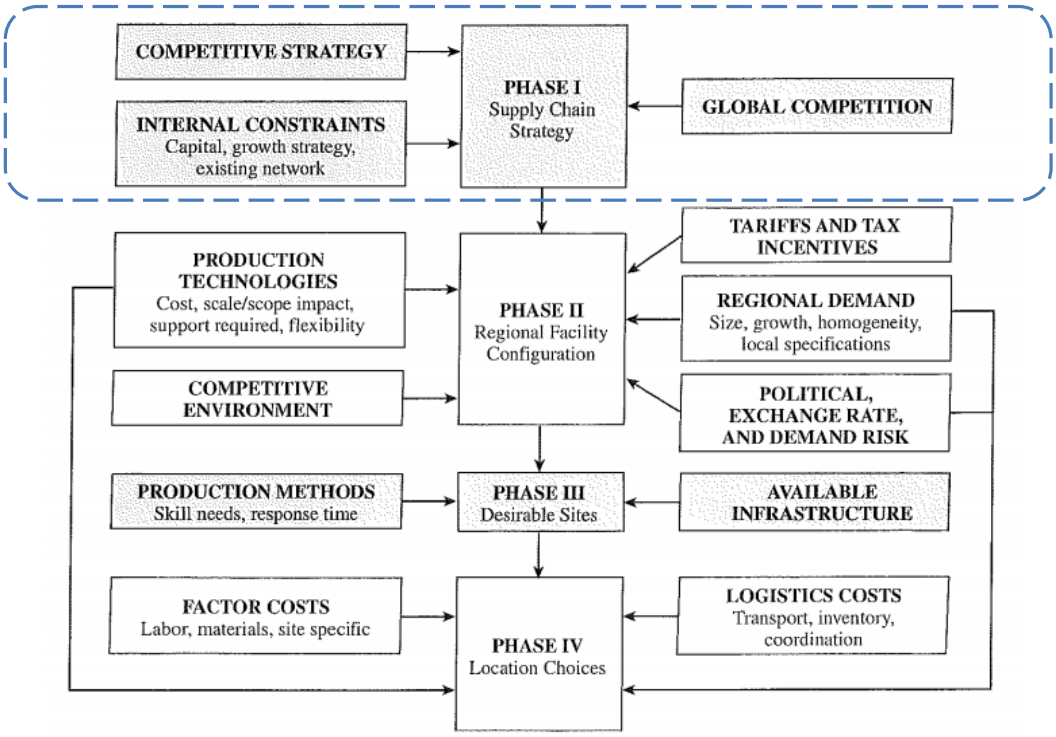


Figure 6: Network Design Decision Framework, Chopra and Meindl (2004)

3.1.1 Competitive strategy

"A company's competitive strategy defines, relative to its competitors, the set of customer needs that it seeks to satisfy through its products and services" (Chopra and Meindl, 2004, p. 22). Also, Lee (2003) writes that a competitive strategy needs to be tailored to meet specific needs of the customers.

The bridge between the competitive strategy and the supply change strategy can be explained with the typical value chain in a company (Chopra and Meindl, 2004). Each entity in the value chain has a strategy which affects the design of the competitive strategy. These strategies cannot be developed in isolation as they as a whole have to contribute to the satisfaction of the customer's needs, thus they should be aligned. Chopra and Meindl (2004) consolidate procurement, transportations, operations, distribution and follow-up services into a supply chain strategy.

Figure 7: Typical value chain, Chopra and Meindl (2004)

3.1.2 New product development

The first step in the value chain is the product development. The created specifications of the product has a significant impact on how the supply chain strategy will be prepared regarding procurement of raw material, transportation of material, manufacturing of the product and distribution out to the customers (Chopra and Meindl, 2004). Determining specifications for a product can be traced back to Fisher's (1997) article on what supply chain strategy is right for either a functional or innovative product. Interesting for the studied industry are Lee's (2002) thoughts that fashion/trend apparel can be considered to be innovative products and basic clothing can be considered as functional products. *"A product with a stable demand and a reliable source of supply should not be managed in the same way as one with a highly unpredictable demand and an unreliable source of supply"* (Lee, 2002).

When differentiating between functional and innovative products it's not the product and its functionality which is examined, instead how demand characteristics differ between them (Fisher, 1997; Lee 2002). Functional products tend to be products which satisfy basic needs. Basic needs seldom change and therefore neither the functional products, these constant needs pave the way for stable, predicable demand with long life cycles (Fisher, 1997). The simplicity in the product and the stable demand increases competition and thereby lowers profit margins. Companies striving for a higher profit margin often try to differentiate their products through design and innovation (Lee, 2002). The innovation itself makes customer demand

difficult to predict, also the need to continuously innovate new products as competition increases over time leads to short life cycles (Fisher, 1997). The differences in demand and profit margin make up for two fundamentally different supply chain strategies. Table 4 is a compilation of how Fisher (1997) and Lee (2002) characterize a functional product and an innovative product.

Table 4: Compilation of Fisher (1997) and Lee (2002) definitions of functional and innovative products

	Functional *(Predictable demand)*	**Innovative** *(Unpredictable demand)*
Demand uncertainty	low	high
Product life cycle	more than 2 years	3 months to 1 year
Contribution margin	5% to 20%	20% to 60%
Inventory cost	low	high
Average stockout rate	1 % to 2 %	10 % to 40 %
Stockout cost	low	high
Volume per SKU	high	low
Average forced end-of-season markdown as percentage of price	0 %	10 % to 25 %
Required lead time	long	short
Obsolence	low	high

Consultancy firm McKinsey & Company have developed a similar way of categorizing products called splintering the supply chain (Malik et al. 2011). The products are categorized based on produced volume and demand volatility. A small amount of products (less than 10%) account for a large amount of the revenue. A large amount of products (more than 50-60%) account for a small amount of the revenue. For the remaining products count for the remaining percentage of revenue.

3.1.3 Marketing and sales

Marketing and sales can be directly linked to the characteristics of the product. Essentially marketing and sales develop strategies for how a product will be priced, promoted and positioned on the market (Chopra and Meindl, 2004). According to Cole (2007) getting a fashion item to the market and into the stores may involve distribution from a variety of sources. The supply chain generally includes middlemen between the company and the customer. The number of middlemen and their role within the company's supply chain varies.

3.1.3.1 Agents

According to The Australian Trade Commission (Austrade, 2014) an agent acts as a representative for the company and doesn't take ownership of the fashion goods. In other words, the potential risk is on the customer that placed the order and neither on the agent nor the company. The company receives orders from the agent, which they in turn have received from their customer, but the company invoices and collects payments from customers as well as delivers the products themselves. The company pays the agent based on a commission only-based agreement of sales, which can act as an incentive for the agent to provide more focus on the company's own products (agents tends to have smaller product range than distributors) and thereby higher sales. Austrade (2014) mean that the company also keeps the control over pricing, branding and marketing. Important for companies to have in mind when working with an agent is that it has fewer resources than a distributor, risk for losing market share if the agent signs over to a competitor and undermine reputation.

3.1.3.2 Distributors

The distributor on the other hand takes ownership of the fashion goods and then resells the products to end users, consumers and/or retailers, in its liable sales region. In addition, the distributor can also sell the fashion goods to wholesalers who in turn sell to end users and/or local retailers (Austrade, 2014). The distributor thus function as a one large customer for the company who in turn supplies smaller markets and customers. Furthermore, the distributor holds stock to reduce lead time for the company's customers and handles in-market work, which saves both time and cost for the company. In other words, the potential risk is on the distributor and not the company itself. Austrade (2014) describe that the distributor are paid by adding a margin to the products, which is higher than the one for agents due to value-adding activities such as responsibility for marketing, carry inventory and extend credit for customers. The higher risk-taking for selling the products by the distributor implies that they require a higher margin than the agent. Thus, the company loses some of its control over the selling process and pricing (Austrade, 2014).

3.1.3.3 Wholesalers

Wholesalers normally buy goods in large quantities from distributors, which may increase their buying power and thus agreed price, and then resells the goods in smaller quantities to end consumers. Wholesalers stock the products before they break down the quantities into smaller shipments for their customers, usually retailers. Thereby the risk is placed on the wholesaler until the products are sold and distributed further on (Cole, 2014).

3.1.3.4 Retailers

Retailers generally order their products directly from wholesalers, distributors or agents, whereby the risk is taken over by the retailer (Cole, 2014). Retailers sell the fashion goods direct to the end consumer and their order volumes are normally smaller than for wholesale. Retailers are often profit driven businesses that buy their products to the most competitive price.

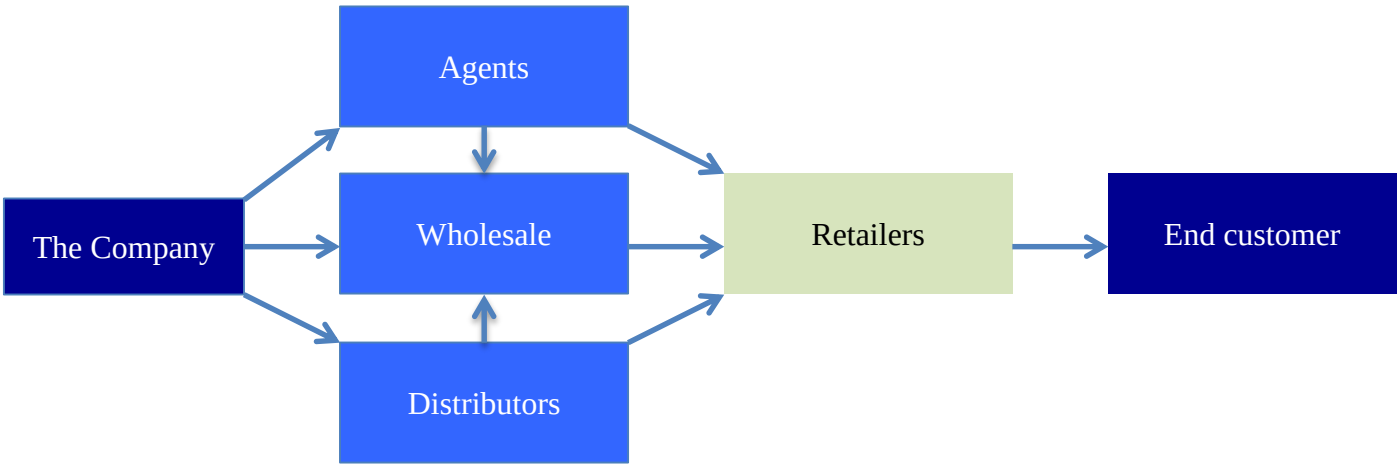


Figure 8: Agents, wholesalers and distributors

3.1.4 Supply chain strategy

"A supply chain strategy determines the nature of procurement of raw materials, transportation of materials to and from the company, manufacture of the product or operation to provide the service, and distribution of the product to the customer, along with any follow-up service and a specification of whether these processes will be performed in-house or outsourced" (Chopra and Meindl, 2004, p.23). The supply chain specifies what the different entities in the supply chain should do particularly well, whether performed in-house or outsourced. The strategy also includes design decisions regarding inventory, transportation, operating facilities and information flow (Chopra and Meindl, 2004).

When the product has been classified as functional or innovative, a suitable supply chain strategy has to be applied (Fisher, 1997). Fisher's matrix (see figure 9 below) presents two different supply chain strategies. Below is first a description of each strategy and an explanation as to which product the strategy is well compatible with (table 5).

Table 5: Characteristics of the physically efficient and Market responsive supply chain (Fisher, 1997, Lee 2002)

	Physically efficient	**Market responsive**
Primary purpose	Supply predictable demand efficiently at the lowest possible cost	Respond quickly to unpredictable demand in order to minimize stockouts, forced markdown, and obsolete inventory
Manufacturing focus	Maintain high average utilization rate	Deploy excess buffer capacity and/or use make-to-order
Inventory strategy	Generate high turns and minimize inventory throughout the chain	Deploy significant buffer stock of parts or finished goods for the residual uncertainty
Lead time focus	Shorten lead time as long as it doesn't increase cost	Invest aggressively in ways to reduce lead time
Approach to chosig suppliers	Select primarily for cost and quality	Select primarily for speed, flexibility, and quality
Product-design strategy	Maximize performance and minimize cost	Use modular design in order to postpone product differentiation for as long as possible

3.1.4.1 Physically efficient supply chain

The overall purpose with the physically efficient supply chain is to provide the customer with a product at the lowest possible price (Lee, 2002). Offering the customer a product at a lower price than its competitors increases a company's competitive advantage. In order to achieve a competitive price all non-value-adding activities should be eliminated (Fisher, 1997; Lee, 2002). Further Lee (2002) discusses additional measures which have to be taken to achieve an efficient supply chain. *"Scale economies should be pursued, optimization techniques should be deployed to get best capacity utilization in production and distribution, and information linkages should be established to ensure the most efficient, accurate, and cost-effective transmission of information across the supply chain"* (Lee, 2002, p. 113). According to Fisher (1997) many companies choose their supply chain strategy based on knowledge of the product's demand. If demand is predictable and stable, thereby being a functional product, an efficient strategy should be deployed. Applying the efficient strategy to an innovative product is considered to be a mismatch. Two of the main reasons being that the efficient strategy has long lead times and aims to minimize inventory. This will result in lost sales due to stockouts or forced markdown on excess inventory due to failure to predict demand (Fisher, 1997). What is further important in regards to the scope of this master thesis is Fisher's (1997) suggestion that supplier selection should be based on cost and quality in an efficient supply chain (table 5). Also the aim to reduce lead times as much as possible without increasing costs.

3.1.4.2 Market responsive supply chain

The overall strategy of the market responsive supply chain is to be responsive to unpredictable shift in demand (Fisher, 1997). This responsive approach aims to minimize stockouts and serve the customer. Challenges lay in maximizing service levels and at the same time minimizing inventory in order to reduce the amount of markdowns and obsolete inventory (Fisher, 1997). According to Lee (2002) the responsive supply chain is characterized by the use of build-to-order manufacturing and mass customization. *"For understandable reasons, it is rare for companies to be in the lower left-hand cell of the matrix"* (Fisher, 1997, p. 109). The author means that companies which have developed a functional product need to have an efficient supply chain to supply the product and be competitive in pricing. *"Innovative products are products that have short cycles with high innovation and fashion contents – and which, as a result, have highly unpredictable demand. Fashion apparel is an example of an innovative product",* (Lee, 2002, p. 106)

3.1.4.3 Fisher's Matrix

Fisher (1997) has developed a matrix to formulate the ideal supply chain strategy. The matrix consists of four cells, each one accounts for a possible combination of product and supply chain priorities. An efficient supply chain should be used for functional products, and a market responsive supply chain should be used for innovative products. Companies using the other combinations tend to be the ones with problems (Fisher, 1997). Further the author expresses that companies often find themselves in the upper-right cell, which doesn't make sense. The economic gain of investing in a responsive supply chain to reduce stockouts and excess inventory is higher than decreasing costs with an efficient supply chain.

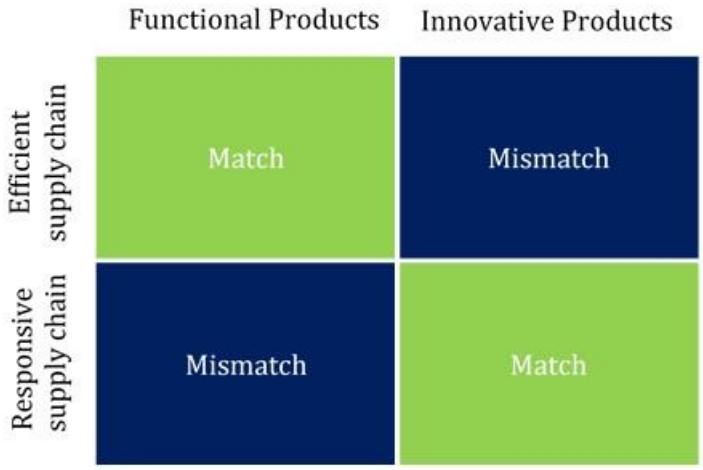


Figure 9: Fisher's (1997) matrix

3.1.4.4 Outcome-Driven Supply Chain

According to Melnyk *et al*., (2010), the historical supply chain has been decoupled from strategy and more focused on costs. The authors argue that the new supply chain is strategically coupled and value driven, it should be designed and managed to deliver specified outcomes. Further the authors believe every supply chain should provide at least one of six basic outcomes:

- Cost
- Responsiveness
- Security
- Sustainability
- Resilience
- Innovation

Each company should try to achieve a blend of outcomes and not solely focus on one in order to increase their attractiveness towards the customers (Melnyk *et al*., 2010). A company which solely focuses on cost is unlikely to be outperformed by others focusing on a blend of the outcomes. This is the price paid for having a blend of outcomes, however the blend would likely provide the supply chains adaptability when the market changes. However, the supply chain should not be "decent" on every outcome, at least one has to stand out in order to not suffer from being mediocre. Finally Melnyk *et al*., (2010) argue that companies will succeed if they understand the needs of key customers and strive to maintain alignment between the customers' changing needs and supply chain design.

3.1.5 Capabilities to achieve strategic fit

Each entity/function's strategy in a company should fit and contribute to the success of the company's overall competitive strategy. This section discusses what type of capabilities a supply chain should have to achieve strategic fit between it and the competitive strategy. Chopra and Meindl (2004) propose three basic steps to achieving strategic fit:

1. Understanding the customer and supply chain uncertainty

This first step is closely connected to Fisher's (1997) thoughts on what type of supply chain should serve the customer depending on the products demand uncertainties. It mainly aims to understand uncertainty from the customers (demand) and uncertainty from the supply chain. Chopra and Meindl (2004) have listed a number of attributes which differ depending on customer segment:

- The quantity of the product needed in each lot
- The response time that the customers are willing to tolerate
- The variety of products needed

- The service level required
- The price of the product
- The desired rate of innovation in the product

A measure used to combine the above attributes is the implied demand uncertainty, it explains what the supply chain should focus on. Implied demand uncertainty is based on the percentage of the market which the supply chain is targeting, not the demand uncertainty for the entire demand (Chopra and Meindl, 2004). Depending on how the customers in the targeted portion are acting it will either increase or decrease the implied demand uncertainty. For example, if the customer requires shorter lead time the implied demand uncertainty will increase as there will be less time to fulfill the customer's order. Besides the demand uncertainty, Lee (2002) expanded Fisher's (1997) framework and included supply uncertainty as explained in section 3.1.4 (Supply chain strategy). The degree of supply uncertainty is closely correlated to the life-cycle position of the product. New emerging products will more likely be difficult to produce and supply than mature products.

To get an overall picture of what the supply chain should focus on and at the same time reducing the amount of attributes, Chopra and Meindl (2004) have developed a spectrum which includes both demand uncertainty and supply uncertainty.

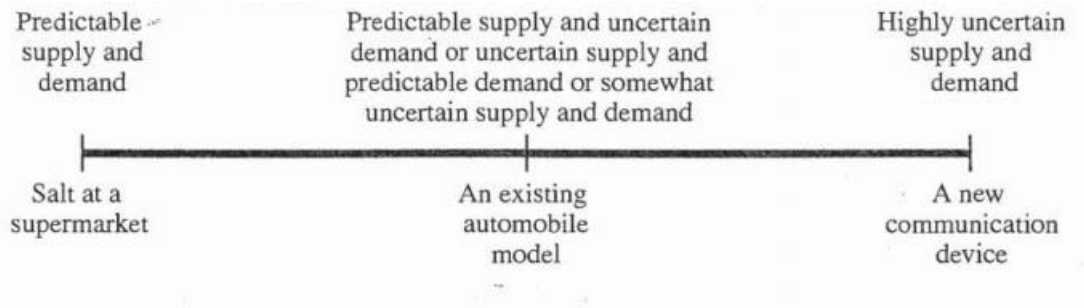


Figure 10: The implied Uncertainty (Demand and Supply) Spectrum (Fisher, 1997).

2. Understanding the supply chain capabilities

"Creating strategic fit is all about creating a supply chain strategy that best meets the demand a company has targeted given the uncertainty it faces" (Chopra and Meindl, 2004, p. 30). From section 3.1.4 supply chain capabilities can either be categorized under the effective supply chain, the efficient supply chain or the outcome driven supply chain. A company should choose the level of responsiveness based on the strategic fit, if the competitive strategy requires a responsive supply chain or not (Chopra and Meindl, 2004).

Chopra and Meindl (2004) have illustrated different levels of responsiveness in a spectrum and included examples of companies with different demand uncertainty. It is mainly the demand uncertainty which decides whether a responsive supply chain or an efficient supply chain is required (Fisher, 1997).

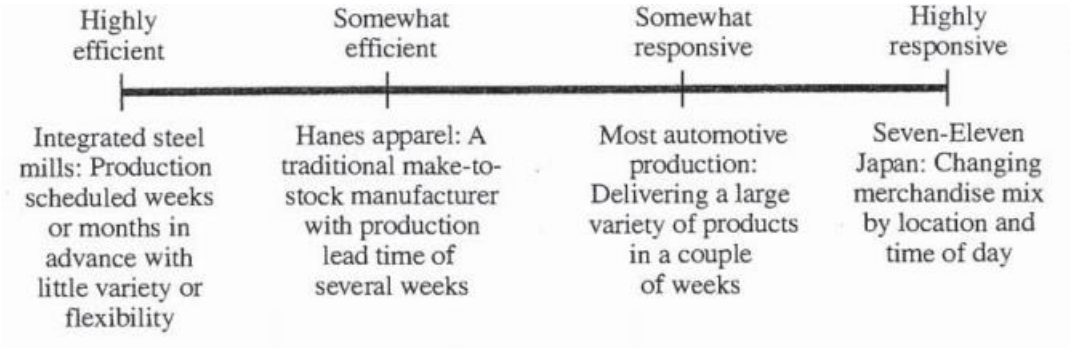


Figure 11: Responsiveness spectrum

According to Chopra and Meindl (2004) the well-known clothing company Hanes is positioned as somewhat efficient in the responsiveness spectrum. Hanes is a leading manufacturer and marketer of everyday basic clothes and operate its supply chain according to long lead times, higher inventory levels and cost reduction. Hanes has an average of 159 days of inventory for its apparel products, which increases the risk for obsolescence and markdowns (Supply chain index, 2013). *"We believe that our status as a high-volume seller of core basic apparel products creates a more stable and predictable revenue base and reduces our exposure to dramatic fashion shifts often observed in the general apparel industry"(*Hanesbrands, 2011*).* Supply chain index (2014) means that Hanes builds their supply chain around basic clothes (e.g. T-shirts, socks and underwear) where more stability is accomplished, thus their need for creation of an exceedingly responsive and flexible fast-fashion supply chain is reduced. *"We're not interested in newness or fashion, but rather focus on identifying the long-term megatrends that will impact our categories over the next five to ten years. The key is long-term trends, not fleeting fashion",* explains Hanes' co-chief operating officer William Nictakis (Barrie, 2014).

3. Achieving Strategic Fit

The third step combines the implied uncertainty from step one with the supply chain capabilities from step two and makes sure the right level of responsiveness or efficiency is achieved (Chopra and Meindl, 2004). Chopra and Meindl (2004) explain that different parts of the supply chain can have either a more effective strategy or a more efficient strategy and the sum of them will ensure the appropriate level of responsiveness. An example being Swedish furniture retailer IKEA whose customers mainly are people who

want stylish furniture at a reasonable cost for them. IKEA has a rather low implied demand uncertainty as they have limited variety of furniture. All IKEA stores carry inventory to absorb fluctuation in customer demand, this is the responsive part of the supply chain. Replenishment orders are sent to suppliers in LCC which experience very little uncertainty as the same amount is ordered at each time when inventory in the stores are decreasing. The suppliers in the LCC who experience very little uncertainty can be seen as the efficient part of the supply chain (Chopra and Meindl, 2004). Having completed these three steps all of the entities/functions should have supporting strategies with the right capabilities to support the competitive strategy.

3.1.6 Strategic factors influencing network design

The competitive strategy of a firm impacts its decision of how to design its supply chain network. If the company focuses on cost, it generally locates its production facilities where the lowest production cost can be found, even though it means locating far away from the market served (Chopra and Meindl, 2004). If the company focuses on responsiveness, it locates its production facilities closer to the market served, in order to be more flexible and quicker react to changes in the market need and trends, even if it results in higher costs. Based on the competitive strategy Chopra and Meindl (2004) have established a number of strategic factors to consider when identifying what strategic role each plant/production site plays in the supply chain strategy:

- **Offshore Facility:** *Low-cost facility for export production.*
  The facility is a low-cost source for markets located outside the country where the facility is located. The selected country should provide low wages and other production costs are low.
- **Source Facility:** *Low-cost facility for global production.*
  The facility is a low-cost source for the entire global network and its primary objective, as the offshore facility, is low costs but is has more of a strategic role. The location is selected where labor and production costs are relatively low, skilled workforce can be found and the infrastructure is well established.
- **Server Facility:** *Regional production facility.*
  The facility is primarily set up to serve and supply the market where it is situated. This type of facility it build due to tariff barriers, tax incentives/free trade zones incentives, local requirements and high cost of logistics to supply the area from elsewhere.
- **Contributor Facility:** *Regional production facility with development skills.*

The facility serves the market where it is located, as the server facility, but it also takes charge for process improvements, product development, customizations and modifications. A lot of the server facilities convert to contributor facilities over time.

- **Outposts Facility:** *Regional production facility built to gain local skills.*
  The facility is located mainly to acquire access to specific knowledge, competence and skills that exist within a certain geographical area, which will provide its entire global network with expertise. It can act as a server facility given its geographical position.
- **Lead Facility:** *Facility that leads in development and process technologies.*
  The facility is located where the access to technological resources and skilled workforce can be found. A lead facility creates new technologies, products and processes to the entire global supply chain network of the company.

3.2 Factors influencing localization

The second phase in Chopra and Meindl's (2004) Network Design Decision framework is *Regional Facility Location*[5]. The objective of this phase is to identify locations where facilities best should be set up, their role and capacity approximation. Doing this companies should analyze and make a forecast of the country demand, to determine whether or not customer preferences and requirements are various or homogenous across different regions. Variation in customer demand requires smaller and localized production facilities and homogenous customer demand favor fewer larger ones. Similar to the strategic factors in phase one, Chopra and Meindl (2004) have established a number of factors for this phase, production technologies, macroeconomic, political, infrastructure, competitive environment, logistics and facility costs. Chopra and Meindl's (2004) competitive environment factor primarily focuses on how to place production in comparison to competitors and splitting the market by locating closer to the market than competitors. As our case companies are selected on the fact that they have outsourced production in both Europe and China this will not be a factor the authors will take into consideration. These factors will be complemented with additional factors influencing the localization decision.

[5] In Chopra and Meindl's theory, phase two includes network design models for calculating where facilities should be located. However, these models are not included in this master thesis as the authors are interested in the considered factors before the models can be used.

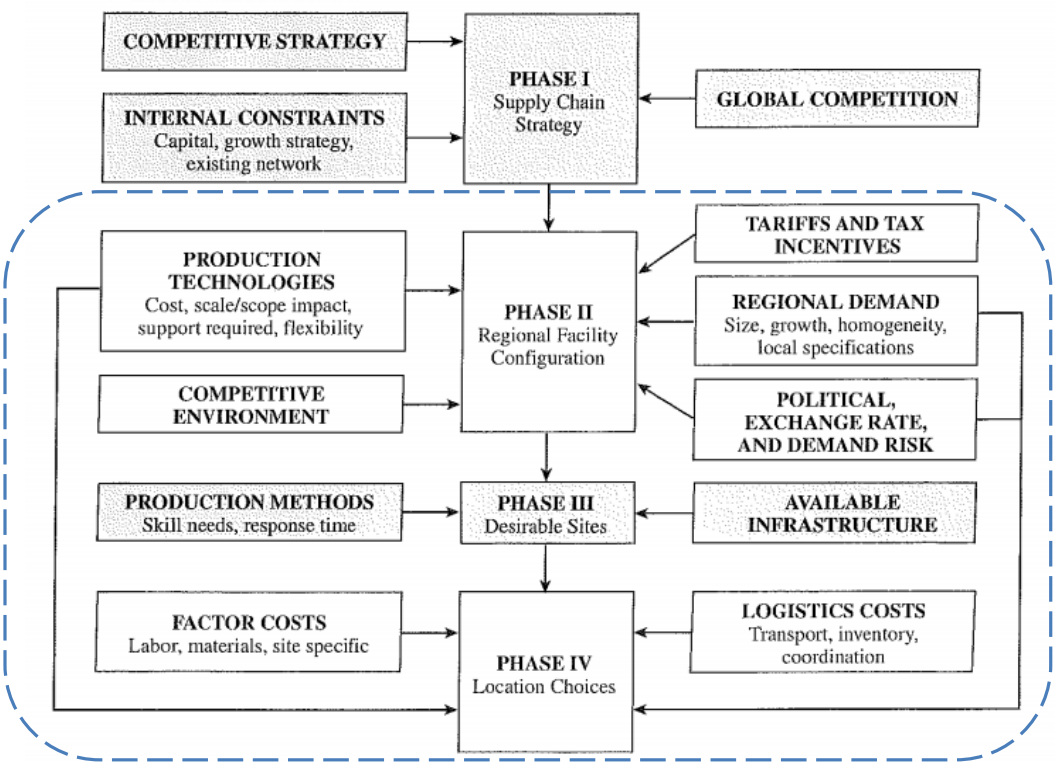


Figure 12: Network design decision framework, Chopra and Meindl (2004)

Despite that phase 3 and 4 primarily focus on pin-pointing the exact locating for a facility within a region, the authors will use a number of those factors also. The authors believe the factors: available infrastructure, different logistics costs and various factor costs are ones which companies who outsource take into consideration.

3.2.1 Production technologies and country specific capabilities

A company's supply chain decision, where to set up manufacturing plants is highly dependent on available production technologies (Chopra and Meindl, 2004). If the production technology generates significant economies of scale or is flexible, which makes it easier to consolidate manufacturing, the most effective are few high-capacity locations. On the other hand if the production technology is very inflexible and the requirements of the production is country specific, the most effective is to set up more facilities to serve the respective markets. Kotabe *et al.*, (2008) suggests that global sourcing can generate an advantage in increased technological expertise when operating in specialize geographical locations.

Production technologies are a part of a country's specific production capabilities, along with raw materials, natural resources and workforce (Gross *et al.*, 2008). The authors suggests that the proximity and access to a resource-

rich host country will more likely attract global companies to invest in the country and is often associated with a search for trade and low-cost production. The Heckscher-Ohlin (1933) framework suggest that a country's comparative advantage is determined of the availability of factors of production; capital, human capital and land (Leamer, 2012). The profitability is highly dependent of input costs, and will thereby gain from inputs that are locally abundant and thereby cheaper. Furthermore, the Heckscher-Ohlin model substantially says that countries should import products that intensively use its relatively scarce production factors and export products that use its abundant factors of production (Blaug, 1992).

3.2.2 Tariffs and tax incentives

Tariffs and taxes are a part of the overall macroeconomic picture a company should consider when locating their facilities (Chopra and Meindl, 2004). These factors aren't internal and since trade is getting increasingly global the importance and influence of these factors is raising and can be essential whether or not a company's supply chain network will succeed or fail.

Tariffs denote the duties that have to be paid when products and/or equipment are moved over international and political borders, and strongly influence the location decision (Chopra and Meindl, 2004). Tariffs can be used by national governments to protect the domestic market and industries. If a location has high tariffs a company needs to take a decision whether or not to serve the specific market or to set up a manufacturing plant in the area, to lower and save duties. High tariffs likely leads to more production locations, with lower allocated capacities. With decreasing tariffs the number of productions locations decrease, as a production facility can supply several markets.

Tax incentives are reduction in tariffs and taxes that different countries, regions and cities can offer businesses to attract them to locate their facilities in the specific area (Chopra and Meindl, 2004). This is specially used in countries with lower economic development. Also free trade zones are provided, where products can be manufactured, handled and exported without the involvement of custom authorities. This creates strong incentives for international companies to set up manufacturing plants in the region to be able to exploit low labor costs at the same time as the host region thus can attract employers and consequently reduce poverty and unemployment.

3.2.3 Political, Exchange rate and Demand risk

Other macroeconomic factors which Chopra and Meindl (2004) stress are political, exchange rate and demand risk. The choice of location of a production plant is likely to be affected by the political stability in the specific

country. Countries that are politically stable with a clear legal system and rules of commerce are preferred (Chopra and Meindl, 2004). According to Schniederjans and Zuckweiler (2004) an additional risk may occur for nullifying outsourcing contracts if a country is political unstable and/or state of rapid social change. Further, the authors describe that an unsophisticated and undeveloped legal system also enhance the risk for changing and nullifying outsourcing contract.

Companies serving the global market with its supply chain are exposed to a significant risk of fluctuations in exchange rates. Producing a product in one country and selling it in another increases the risk of capital appreciation, since the cost incurred in the production country's currency and revenues are obtained in the currency of the country of sale. The fluctuations in exchange rate can be minimized using financial instruments (Chopra and Meindl, 2004). Schniederjans and Zuckweiler (2004) suggests that a greater risk for forecasting expected profit and cost occur by enhanced currency variation in a country.

Fluctuation in demand caused by fluctuation in the economy of a country is also something a company has to take into consideration (Chopra and Meindl, 2004). A plant serving a country with decreasing demand, as a result of fluctuation in demand, should have the flexibility to use unutilized capacity to meet the needs of other countries where demand is high. Local facilities should also have the capabilities to meet specific needs of regional demand.

3.2.4 Cost

Offshore production and manufacturing has been an increased trend for the labor-intensive apparel industry with its short product life cycle, low predictability and high volatility (Nagurney and Yu, 2011). Companies within the industry have to react on new fashion trends and new customer demand patterns quickly, in order not to lose market shares and sales. According to Dana *et al.,* (2007), two crucial factors for competitiveness in the apparel industry are lead time and cost (figure 13). Today, direct labor cost accounts for approximately 30-50% of the final product, thus major savings can be made by offshore production to LCC in Asia. The authors mean that companies within the industry consider labor and production costs as key factors when selecting country to offshore its production as well as the degree of trade liberalization. In addition, the significant reduction in direct labor cost in combination with increased productivity often lead to higher returns (Nagurney and Yu, 2011).

However, offshore activities may also generate additional costs in terms of increased rate of returns, upfront payment and the necessity for careful

planning of the production activities by the company (Dana *et al.*, 2007). Offshore production often leads to increased lead time and poor control of quality, which can damage the brand image and customer loyalty, thus the risk of loss in sales (Christopher, 2011; Dana *et al.*, 2007). The increased distance between the companies' headquarters and the selected country of production results in additional costs for travelling overseas to establish, maintain and control relationships (Interview, Company E, 2014-04-28).

In other words, offshore production for apparel companies can make good sense for some, but it is important to carefully look at the economies before taking the decision. According to Ritter and Sternfels (2004), research has shown that too many apparel companies overestimate the savings, thus only looking at the cheaper cost for direct labor, and thereby fail to recognize the overall total cost that the relocation may include. By offshore production abroad companies needs to analyze and deal with additional costs such as currency exchange rates, obsolescence and inventory (Ritter and Sternfels, 2004).

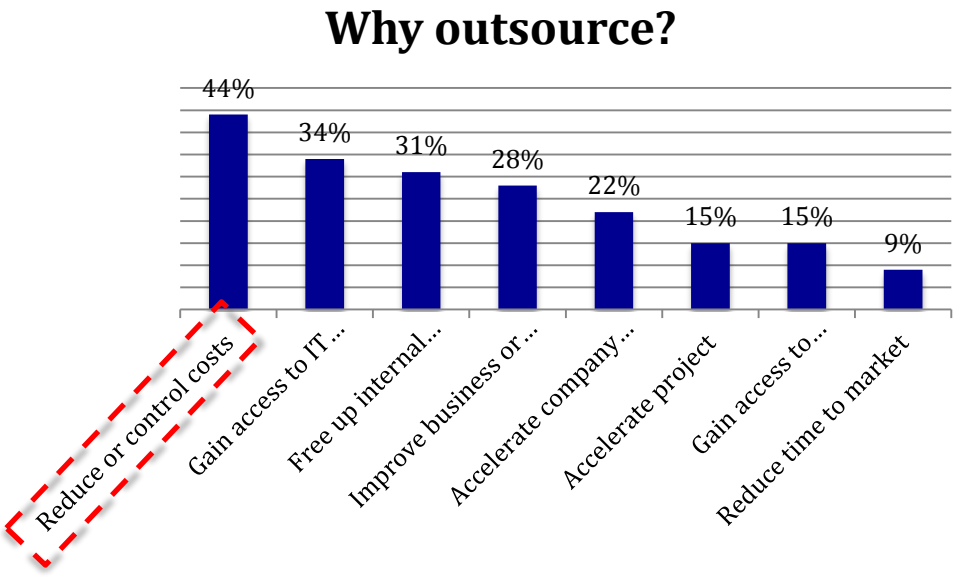


Figure 13: Reasons why companies outsource, Fibre2fashion (2011)

3.2.5 Additional factors

These additional factors are ones which Chopra and Meindl (2004) have touched upon but not explicitly discussed. The factors are derived from theory regarding outsourcing and offshoring, and from the additional interviews the authors conducted with industry experts.

Vestring *et al.*, (2005) argues that every country presents a different mix of strengths and weaknesses. The authors have identified several factors: costs,

regulatory environment, domestic markets, engineering talent, political stability, currency fluctuations, facility costs, infrastructure, and language skills. These factors can be compared to Chopra and Meindl's (2004) factors. Another study in the area of offshoring locations was conducted by Handfield (1994), who identified a set of criteria when evaluating suppliers/locations: quality, cost, trust, product and process technology, delivery and lead time.

3.2.5.1 Development in LCC

As described in the section 1.5 (Challenges with China as a LCC) several consultancy firms, researchers and industry experts discuss the decreasing attractiveness of China. The increasing wages, decreasing workforce and CSR awareness are some of the reasons behind the decreasing attractiveness. However, the productivity and efficiency of China compared to other LCC is still something which it advantageously for them (The Economist, 2012). In 2011 China's labor productivity was $ 14 200 per person employed (Deloitte, 2013). Compared to Bangladesh with a labor productivity in 2011 of $ 5 384 (Knoema, 2012). The authors have added development in LCC as a factor to see if it has affected the case companies' location of offshored production.

Bangladesh is a country which has increased their export of apparel goods the previous years and has become the world's second largest exporter after China (Paul, 2013). The export of apparel goods accounts for around 78 % of Bangladesh's total export value (BGMEA, 2014). Knitwear and woven garments are the primary exported apparel goods, which account for roughly 38 % and 41 % of the total. The value of exported apparel goods increased with 13 % in 2013 (BKMEA, 2014).

3.2.5.2 Quality

Burns and Reisman (2004) suggest that there are two main reasons why a LCC sourcing decision generally makes or breaks, where quality risk is one of these factors and the other is inventory and forecasting. It is important to ensure that LCC suppliers produce and ship products that meet standards of quality of the company. A concern that needs to be taken in considerations is if the product is sensitive to heat, humidity and salinity, and if specific packages is needed to support the product when transported. *"A container full of product at a favorable total cost of ownership is still worthless if the goods arrive damaged, corrodes, or defective from the supplier"* (Burns and Reisman, 2004). A research made by PwC (2008) found that product quality has the highest priority for future global sourcing activities and pose the greatest risk, and thus more focus on setting quality standards needs to be given.

3.2.5.3 Lead time

Lead time is the time it takes from a customer, industrial or consumer, places an order until the product or service is delivered. Today, customers in all markets are increasingly time-sensitive and more demanding than ever, which are reflected in its purchasing decisions. According to Christopher (2011) customers nowadays tend to buy from suppliers, which fulfill their quality specification, at the same time as they offer the shortest lead time. Furthermore, customers aren't as loyal to specific brands as before and are willing to purchase a substitute or a competing brand, in case the preferred product is out of stock.

Strategic lead time management is significant in today's global competitive environment and lead time for a product has direct effect on both cost and customer satisfaction. A long logistics pipeline and locked up inventory, results in higher capital and transaction cost (Carter and Kaufmann, 2002). A long lead time can also imply a slower response to market trends and customer demand, which can be devastating for a company, and result in loss of customers. In a global pipeline the level of uncertainty is higher regarding shipment status and the many stages in the pipeline. Delays and variability may occur due to customs clearance, shipping and consolidation, and can cause issues when companies increase their global presence. Consequently, companies try to compensate for the uncertainty by over-ordering and/or increase their inventory buffers, which in turn can result in increased cost and product obsolescence (Christopher, 2011).

3.2.5.4 Corporate Social Responsibility

CSR is about how companies can contribute to a better environment, better labor conditions and to a better world (Van Weele, 2010). The idea of CSR is for companies to operate under the requirements of the current world without harming for future generations. They need to balance the interest of the environment, customers, employees and shareholders. Therefore companies today pay a lot of attention to sustainability and three main stakeholders' needs are taken in consideration; Profit, Planet and People (Van Weele, 2010). In contrast to business objectives, where the goal is to maximize profit, CSR is about being unselfish and show respect against the society and the environment. CSR has become a high priority on the managements agenda and involves three concepts; business ethics, corporate responsibility and corporate governance and is an initiative that is becoming more and more important for companies who are exercising global sourcing (Fang *et al.,* 2010). Furthermore, CSR is important in today's more transparent and informative world, where public-interest lawyers and consumer groups rapidly bring attention to companies that act irresponsibly and unethically because of their business activities (Van Weele 2010; Fang *et al.,* 2010).

Since, a social or environmental scandal quickly can ruin a company's reputation, which takes years to build up, CSR has become a focus area to avoid this kind of potential company disaster (Van Weele, 2010).

CSR has become a global trend, which affects the company's strategy of sourcing highly (Fang *et al.,* 2010). A well-implemented CSR concept may result in a variety of gained competitive advantage such as increased sales, improved productivity, boosted customer loyalty and improved brand image and value, due to e.g. increased employee morale and brand value (United Nations Industrial Development Organizations, 2014). Worth mentioning is that CSR is a term that can be difficult and uncertain to measure and the importance is mainly greater for larger corporation than for smaller ones (Fang *et al.,* 2010).

3.2.5.5 Cultural challenge

Culture is a factor that influences international consumer behavior and marketing, and attention towards the factor has increased in recent years. Culture includes behavioral patterns, values, preferences, religion, linguistic and habits acquired by every human being in the society, and differences in these are one of the most challenging factors in today's global sourcing. Language is a subcategory to culture and has great importance when gathering and analyzing information as well communicating with different countries, but cannot itself clarify different cultures (Fahrhangmehr *et al.,* 2007). Kotabe *et al.,* (2008) suggests that culture misunderstandings and communication problems may result in quality problems and language difficulties can have a negative effect on relationships. The effectiveness for global sourcing can be hindered if communication problems between different countries arise and lack of understandings of cross-culture occur (Accenture, 2006). According to Schniederjans and Zuckweiler (2004) an international outsourcing decision may not be fulfilled as satisfactorily and/or culturally as of a domestic outsourcer, due to language, culture and custom differences between the countries.

3.3 Developed framework

The problem description of this master thesis contained three key areas: Alignment with competitive and supply chain strategy, Development in LCC and Localization of outsourced and offshored production. Based on the theoretical framework and interviews with industry experts the authors have expanded the model with one more key area, other factors (figure 14).

One of the key areas of the theoretical framework is chapter 3.1 (Strategic alignment), which is one of the key areas in the developed framework. In this area it is important to define a competitive strategy and what type of products

should be sold. A supply chain should then be established with the right capabilities to support the competitive strategy. The second part is chapter 3.2 (Factors influencing localization), which is the mid-section of developed framework. This section focuses on a number of factors presented by Chopra and Meindl (2004), which influence the localization of production. Before considering these factors the alignment between the competitive strategy and supply chain strategy has to be in place.

The third area of the developed framework is the development in LCC. This area has emerged from interviews with industry experts, the authors' own interest and Deloitte's interest. The area mainly focuses on the decreasing difference in wages between Europe and Asia.

The final area of the developed framework is other factors. This area includes factors that Chopra and Meindl (2004) did not have in their framework, but which the authors find interesting or important, e.g. CSR.

The developed framework is used to analyze the alignment between a company's competitive strategy and supply chain strategy, and based on the alignment analyze what factors they find important when locating outsourced and offshored production.

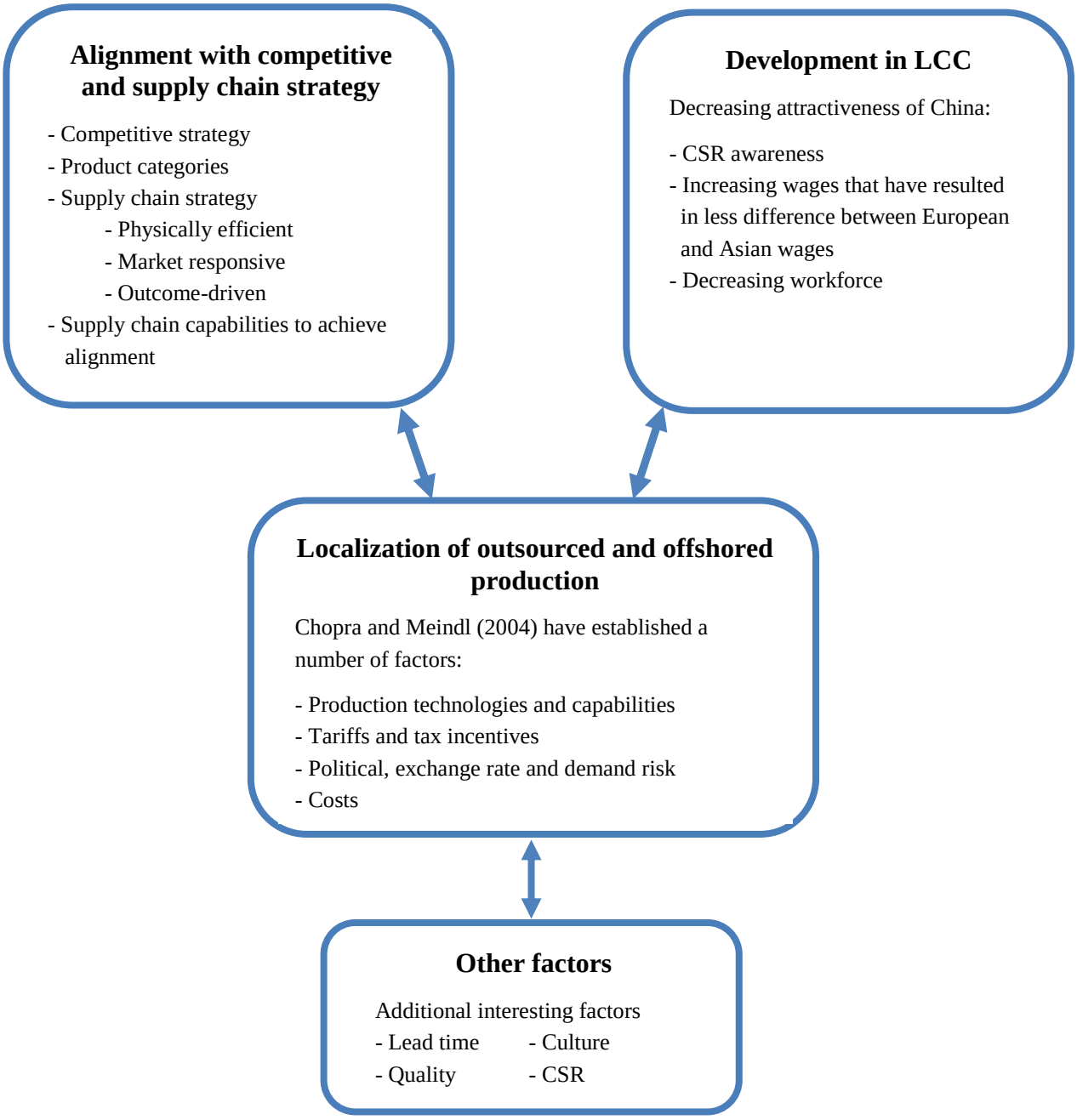


Figure 14: Developed model

4. Empirical study

In this section the five Swedish fashion apparel companies selected for the multiple case study are presented. The companies are described regarding: general information, supply chain, product categories, planning cycle, outsourced and offshored production. Further a number of factors influencing production location and the companies' future sourcing perspectives are described.

4.1 Company A

4.1.1 Company description and competitive strategy

Company A is relatively young in the fashion apparel industry and was founded about 15 years ago by entrepreneurs. The business concept is to design, market and sell high quality women's clothes primarily through external independent retailers. The studied company is positioned within the upper mid-price segment, defined as "within reach", and is primarily competing with its products rather than on price. Company A's turnover 2013 amounted to 230 MSEK and the company has around 60 employees today working within production- and product development, design, shop staff and sellers.

Company A has its very own innovative fashion design style and are generally not influenced by current market trends. The main theme for the company's fashion design, has since the start, been committed to feminine aesthetic and playful design as well as feeling. The idea is to complement the market and to be commercially interesting with its unique personalized design and clothes. The initial product portfolio only included women's wear but a home concept has recently been released. The identified end customer has a mental age of 29, enjoys life, is a world traveler, is caring, is fun to be around and likes all kind of music. Unique for this relatively small brand is its popularity among three generation of women, from 15-65 years, which is a challenge for the company's designers.

The net sales for company A decreased between the years 2010 and 2012 with almost 40%, but increased yet again in 2013 (table 6). The EBIT (operating profit), operating margin and the annual profit on the other hand has decreased the previous five years and resulted in a loss 2013.

Table 6: Key figures from company A's annual report 2013

	2013	2012	2011	2010	2009
Net sales (MSEK)	230	220	290	360	330
Operating profit, EBIT	**-25**	0	20	50	60
Operating margin (%)	**-10**	0	5	15	20
Profit for the year (MSEK)	**-20**	5	15	35	45
Profit margin (%)	**-10**	0	5	15	20

4.1.2 Supply Chain

Company A has a number of channels which their products are sold through, figure 15. The largest channel is through external retailers. In most regions company A does not sell directly to retailers, instead they use sales agents. The sales agents have exclusive rights and show sample collections to external retailers at trade shows. The retailers than place orders at the sales agents. Company A terms this business model as a wholesale model. Its purpose is to mitigate risk as the retailers placed orders are binding, thus the volumes produced have already been sold. The second channel is similar to the first one. However, instead of using agents the products are sold at a discounted price to distributors. In this case the distributors take the risk as they keep inventory of products which they sell to retailers. Products sold through distributors imply lower margins and decreased control of sales. The final channels are the ones company A controls in-house. They include: three stores, one webshop, two factory outlets and two shop-in-shops. The factory outlets are used to sell excessive volumes of previous collections. The company-owned stores and online webshop are two emerging distribution channels, however their ambition is not to transition into a retail company. The evolvement of the company-owned stores is a part of their strategy but they will still primarily focus on being a wholesale company. Selling through their own channels gives company A more control throughout the entire supply chain. However, these channels increase the risk for company A as they keep inventory and the number of employees increase.

Company A’s supply chain consists of approximately 25 supplier and 1000 distributors. The distributors are located globally in 30 different countries. Company A’s largest market is their domestic Swedish market which accounts for 60% of their total revenue, followed by the German, US and Scandinavian markets. The company’s market strategy is focused on increasing revenue in their existing large markets where there is potential to grow.

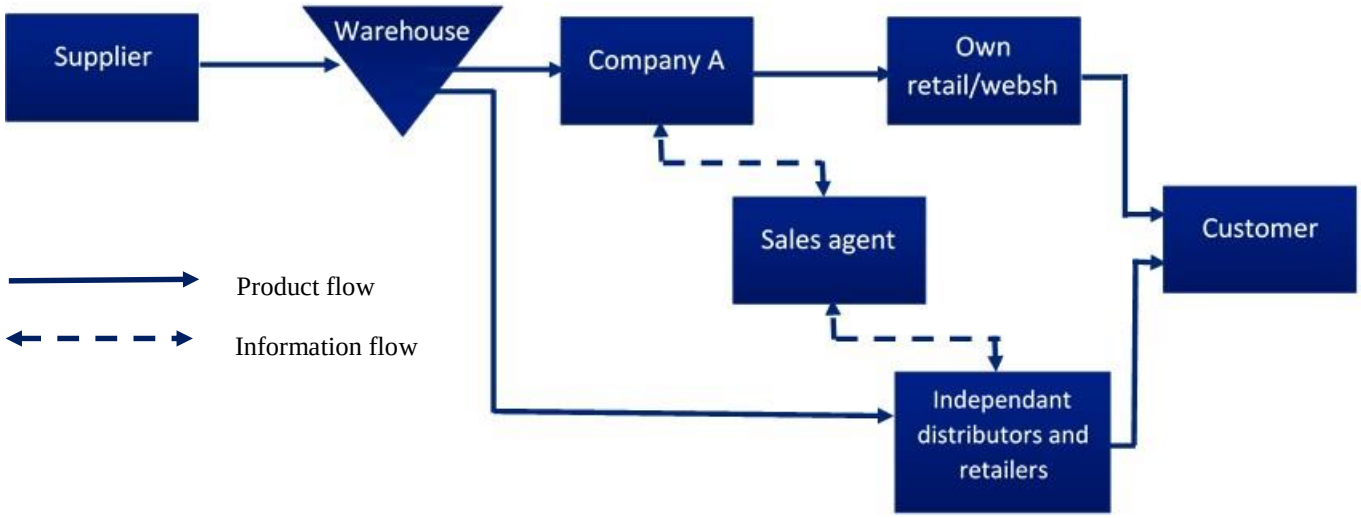


Figure 15: Company A's supply chain

4.1.3 Product mix and planning cycle

Company A designs and produces four collections per year: Spring, Summer, Autumn and Winter. However Spring/Summer and Autumn/Winter are produced and sold at the same time, but delivery of the collections differ. The production cycle starts with planning and design, and ends with delivery to retailers. This cycle takes approximately 1 year and is the same regardless of the type of product and production lead time for the product. The production lead time for company A's products range from 12 to 20 weeks, meaning that production of a product with 20 weeks lead time will be initiated approximately 8 weeks before a product with 12 weeks. It's the purchasing-departments task to place orders for every product at the right time in order to receive all products at the same time, regardless if the product has a lead time of 20 weeks or 12 weeks.

Each of company A's collections contains different types of products (figure 16). The broad consists of basic clothes. These are clothes which the company knows they are going to sell large volumes of and are often recurrent from earlier collections. The middle product category consists of seasons clothes, these are clothes which characterizes the seasons and collections. Products in this section are more complex and expensive than the ones in the basic category. The products in the top are categorized as trend. They are the products, which really profile the brand and its look. They are therefore extremely important for the company. These products are the most complex ones and are produced in very small series, for some products only 100 pieces are produced.

when constructing the product mix company A tries to fill each category in the best way. This is done by: taking historical sales into consideration, listening to the customers and their needs, and including the design department, which have knowledge of ongoing trends. As explained earlier all categories are very important. The basic products are the ones that have the highest margins and they sell the most of. As complexity and expenses increase further up in the product mix margins and volumes decrease, however they are still very important for the brand. Regardless of position in the products mix they are all sourced similarly. However, products have different lead times. This is not a deliberate choice, it is affected by the production lead time. An advantage with the suppliers in Europe is the possibility to place re-orders of products from them if they have the capacity.

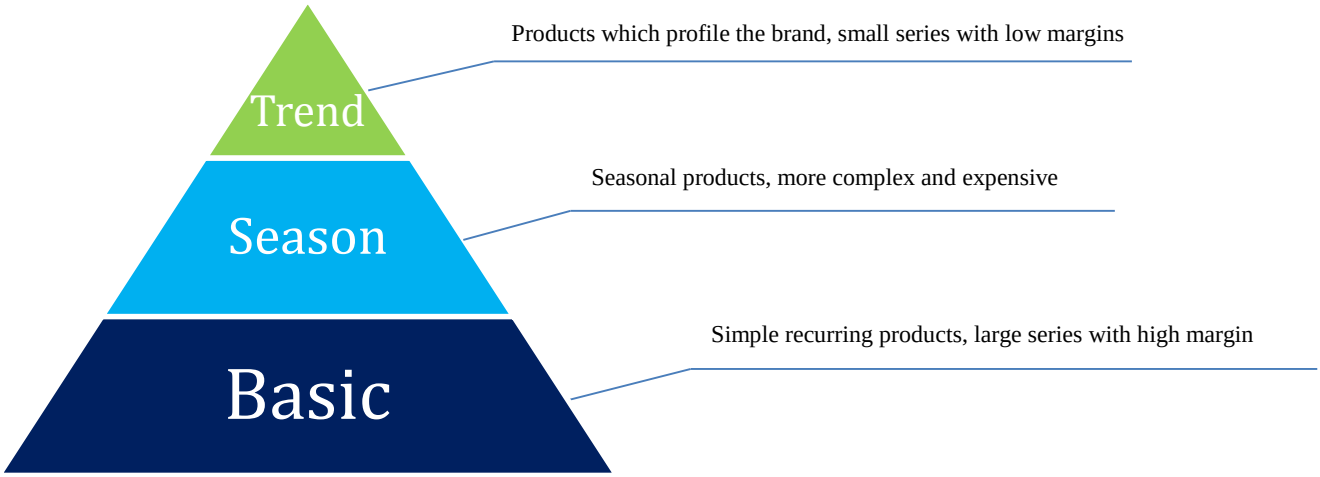


Figure 16: The product mix of company A's collections

4.1.4 Outsourced and offshored production

Company A's offshored production is located both in LCC in Asia and Europe. 40 % of the total production volume is produced in China, 25 % in Portugal, 25 % in India and the remaining 10 % in Italy, Morocco and Turkey (figure 17). Company A's fundamental strategy for supplier selection is not have too many as they want to establish long-term relationships to ensure that the suppliers are committed to producing their products with the highest quality. Thus, they use approximately 25 recurring suppliers for each collection. As company A primarily competes with the product itself and thus want to establish long-term relationships with their suppliers to ensure quality they are not interested in frequently swapping suppliers to receive the lowest possible price.

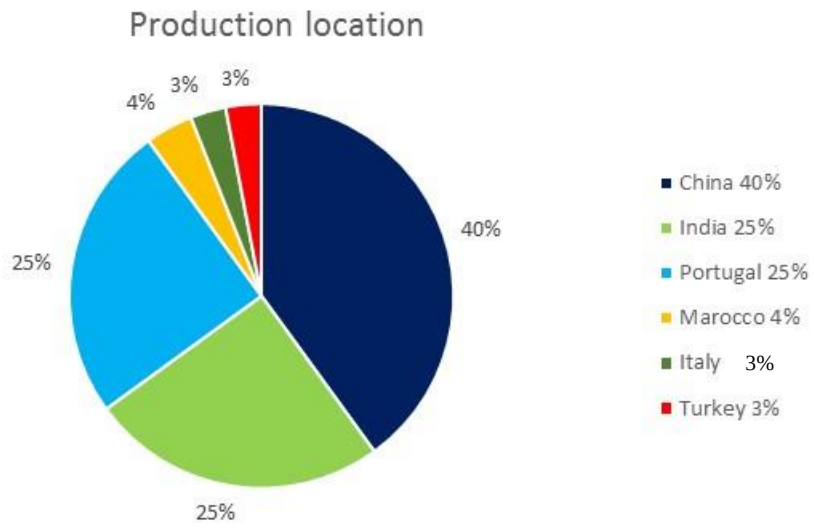


Figure 17: Geographical location of company A's production

4.1.5 Factors influencing location

There are a number of factors that company A takes into consideration when locating offshored production. These factors have been divided in primary and secondary by the company based on the relevance for a decision regarding production localization:

Primary factors

- **Production technologies and country specific capabilities** - The most fundamental factor being that the supplier has the capabilities and competence to produce the product. There are a large number of suppliers in China which can produce apparel goods, however not all of them can produce company A's products.
- **Quality** - The supplier must live up to the expected quality standards regarding product quality and delivery reliability.
- **CSR** - Company A is a member of the non-profit organization Fair Wear Foundation, which works to improve the workplace conditions in the textile industry (Fair Wear Foundation, 2014), their suppliers have to comply with the foundations "Code of Labor Practice".
- **Costs** - Once assured the suppliers meet the quality requirements company A focuses on cost. Company A experiences that quality and costs are closely related and is a difficult trade-off. They want to purchase the right product to a reasonable price.

Secondary factors

- **Political, Exchange rate and Demand risk** – These factors is a part of the evaluation but do not alone determine the final location decision. A country that is political unstable and/or with large fluctuations in exchange rate for a long time wouldn't be selected for production.
- **Development in LCC** – Company A has experienced increased cost of production in particularly China. However, its existing production in the country is crucial for some product categories regarding production technologies and specific capabilities, thus re-localization of suppliers aren't feasible.
- **Lead time** – Lead time isn't the factor of highest importance when the company makes its decision for production location, they rather chose location for its specific capabilities, technologies and quality precision. The company uses a fixed order cycle, thus they know when to order, which reducing the dependency on lead time for its products.
- **Tariffs and tax incentives** – Company A mostly takes these two objectives in consideration regarding apparel products that aren't critical for a specific country (e.g. knitted in China). If a product thus can be manufactured both in Europe and Asia, the company performs a price comparison to evaluate the most optimal location, where tariffs and tax incentives are included.
- **Culture challenge** – The language level and communication ability of the manufacturer affect the choice of supplier location to some degree but are not essential.

4.1.5.1 Capabilities

Directly related to the capabilities and competence of the suppliers is the geographic location according to company A. The different countries are chosen for specific reasons. Each country is picked with regards to their specific knowledge and competence. Thus, the product decides where the supplier is located. Company A's largest and most well-known product group is their knitwear. 90% of all knitwear is sourced from China and the remaining 10 % from Morocco. China is renowned for their ability to produce knitwear and needlework (Interview, Company A, 2014-02-28). Company A's perception is that no other country is better than China in this area, and this type of product is not available to purchase from Europe. Company A has experienced difficulties followed by their dependence of China. Historically China has had large amounts of labor forces, however today it is becoming scare. The specific capabilities of India is their ability to produce light woven clothes and belonging embroidery and sequins. Portugal is also a country which is capable of producing light woven clothes of high quality. However the amount of needlework produced in Portugal is decreasing.

4.1.5.2 Quality

Company A is in the upper mid-price segment, thus their customers are not as price sensitive as those in the low-price segment. Consequently they primarily compete with the product itself and therefore all of their suppliers have to meet the required standards. The long-term relationships with suppliers has resulted in the involvement of the suppliers in the design process. Company A argues that their suppliers in China maintain the same quality standards as those in Europe. There is a wide range of suppliers in China, ranging from very cheap suppliers to suppliers with the highest technology available. This range of suppliers is also present in Portugal. Thus, company A means that quality is not country specific, rather supplier specific.

4.1.5.3 Costs

The cost of producing a certain garment is taken into consideration when evaluating the overall picture of a supplier. Following their choice to involve the suppliers in the design process they are not interested in switching suppliers to achieve the lowest possible price. Company A has a final retail price in mind which their margin is included in. It's the purchasing department's task to purchase the "best" product. Cost is a parameter which is included in the "best" definition. Company A finds it difficult to perform a cost break-down of their products as it varies significantly depending on product. One product might be made of expensive silk where the material is by far the largest cost parameter, and other products might be crocheted from simple thread and then labor is by far the largest cost parameter. As labor is less expensive in China and India than European countries such as Portugal, labor intensive products, such as knitwear and crocheted products, are purchased primarily from China. The 1 year order cycle allows company A to use ocean freight for the majority of their products, thus the logistics cost is only a couple of percent of the total cost per garment.

4.1.5.4 CSR

When selecting suppliers CSR is a factor that company A takes into consideration. They want to contribute to better conditions in countries that produce apparel goods. Their CSR initiatives is also something their customers expect them to actively work with. As a member of a number of organizations, company A's suppliers are required to sign a contract that they will follow established rules and regulations. According to company A is it difficult to generalize an entire country and say if they are good or bad at working with CSR. Instead they distinguish between different suppliers/factories in the country as it can vary significantly. Thus their discussion to purchase from a supplier in Europe or Asia is not affected by

the CSR factor, as they are likely to find supplier working nothing at all with CSR and supplier working very much with CSR in both locations.

4.1.5.5 Lead time

The recurrent cycle for design, sales, production and distribution of 1 year implies that each specific task has its own deadline. Lead time is not of the highest importance, with the fixed order cycle which they use they know when to order. From their different suppliers in Europe and China they have experienced different lead times. One main contributor is naturally the difference in distance but also the infrastructure and how the factories are constructed. The factories in Europe are often smaller and the different production-steps: dyeing, printing, embroidery etc. are located closer to each other which reduces the production lead time. The shorter production lead times and transportation times has led to company A advantageously using European supplier for re-orders of products with high demand. Company A is a small client of their suppliers in China, thus they have to order long in advance, the good suppliers are very attractive thus there is a waiting time. This is one of the main reasons why they need to start their production cycle 1 year in advance.

4.1.6 Sourcing in the future

To source more products from Europe in an attempt to reduce lead times is not company A's main focus. They will continue to focus on locating production based on how good they can deliver products at a high quality. As described earlier company A has previously been required to reduce the amount of knitwear in their collections as it was difficult to secure capacity at the reducing number of suppliers in China. According to the company A the younger generation in China is not interested in working in the textile industry as their options are increasing as a result of the increasing level of education. Company A experienced that the financial crises in 2009 has increased the production-costs in all countries. Many factories were forced to close down as a result of the crises, and when the demand for apparel increased again suppliers had a difficult time attracting labor. Following these changes company A has experienced that production has increased in countries such as: Ethiopia, Bangladesh and Vietnam.

4.2 Company B

4.2.1 Company description and competitive strategy

Company B was founded about 20 years ago and is a leading fashion apparel company in Scandinavia. The business idea of the company is to design, manufacture, communicate and sell fashion clothes and accessories, through

its timeless style. The garments are aimed for the modern woman and man that appreciate high quality fashion at an attractive price. Company B's well-designed products are recognized through its clear concept, simplicity and high quality. The product portfolio includes basic and formal clothing in knitted, weaved and tricot as well as shoes and accessories. The apparel label is positioned within the upper mid-price segment and is primarily competing with its products rather than on price. Sustainable production is of great importance, both regarding chemicals used, labor rights and its effect the environment. Company B sells its products through their own retail stores combined with wholesale. The turnover 2013 amounted to 650 MSEK and the company has approximately 200 passionate employees, 7 local offices and headquarters in Stockholm. The company's net sales has increased over the past five years (table 7). However, their EBIT, operating margin and annual profit has fluctuated with a peak in 2011, which can be a result of the company's speculation problems for their own retail. (The key figures for 2013 not available since the annual report for 2013 hasn't been released yet).

Table 7: Key figures from company B's annual report 2012

	2013	2012	2011	2010	2009
Net sales (MSEK)	650	570	530	420	410
Operating profit, EBIT	-	50	80	45	20
Operating margin (%)	-	10	15	10	5
Profit for the year (MSEK)	-	40	55	30	5
Profit margin (%)	-	10	15	10	5

4.2.2 Supply chain

Company B's supply chain consist of approximately 50 suppliers, 75 production facilities and 700 retailers. In addition to selling their garment products through retailers (both department stores and hand-picked specialty stores) they also sell through approximately 50 own brand stores in the Nordic countries, Benelux and Germany. The distribution of sales between wholesale and their own retail is 50/50 and the combination between the two is required to maintaining growth. The advantage with their own retail shops is the good profit margin and to have full control. However, the benefits with wholesale are the risk mitigation and its contribution to strengthen the company brand. The profit margin for wholesale compared with own retail is overall less. Company B is represented in 20 markets and the largest one is their domestic Swedish market followed by the other Nordic countries and Germany. *"The most important for us in relation to supply chain strategy is to make it as easy*

as possible, given the quality and style. The latter part means high ambitions regarding CSR issues".

The production cycle starts with planning, product development and design. The production and design teams in close collaboration during product development and the collection process and share objectives for margins, delivery performance, sustainability and quality. The sourcing of suppliers is managed by the product developers and buyers, thus they also need to maintain a close dialogue to ensure the best possible outcome. The sourcing manager is responsible for finding the best material for the apparel production. Company B's business model differs slightly for wholesale and their own retail. For wholesale, agents and distributors place orders whereupon company B orders the demanded volume from its selected suppliers, which mitigates the risk for the company. On the other hand, the purchasing process for its own retail stores is based on speculations, which increase the risk for ordering the wrong volume. The company has struggled over the years with difficulties to forecast the demanded production volume, and is still a challenge today. They have either ordered too small volumes, which resulted in loss in sales or excessive production that leads to markdowns. *"The order volume has for a long time fluctuated due to difficulties in predicting customer demands, this has resulted in either markdowns or lost sales".* First when the order volumes for wholesale is placed together with the forecasted volume for the own retail, company B orders the total volume from their suppliers simultaneously.

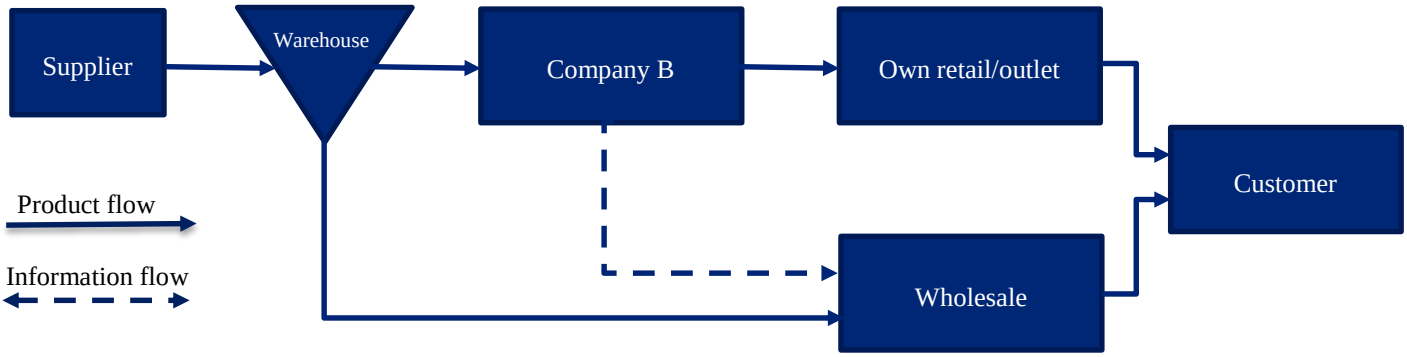


Figure 18: Company B's supply chain

4.2.3 Product mix and planning cycle

Company B's products are divided into carry overs representing 25 % and the remaining part is seasonal collection (figure 19). Carry overs is apparel products that is recurrent and running over longer periods of time and basic clothing. The production volume for this product segment is larger for the men collection than for women. There are a certain number of products in the

carry over segment that amount for the majority of the company's sales and revenue. The total order volume for carry overs is based on speculation for its own retail and placed orders (make-to-order) from wholesale. The order production cycle is 1 year for this apparel segment and starts in quarter one. In quarter three all orders, both for their own retail and wholesale, have been placed, thus the demanded volume can be ordered from its selected suppliers. In quarter four the manufacturing process of the garment takes place at their supplier's facilities. The next year, in quarter one, the products are delivered and ready to hit the stores. According to the company, demand uncertainty is relatively stable for their assortment and brand profile.

Company B's seasonal collection is divided into main and capsule. The main collection is the larger principal of the two and is released four times during the year; Spring, Summer, Autumn and Winter. Capsule is a significantly smaller and trendier collection released in the latter part of the principal collection, thus four times a year. Each season has a set time plan with deadlines for each step in the process. For the season collections, when planning and design is finished, the time from order to delivery is 16 weeks for Europe and up to 24 weeks from Asia depending on supplier and product produced. The profit margin for company B's product is higher for their less expensive products than for the more expensive ones.

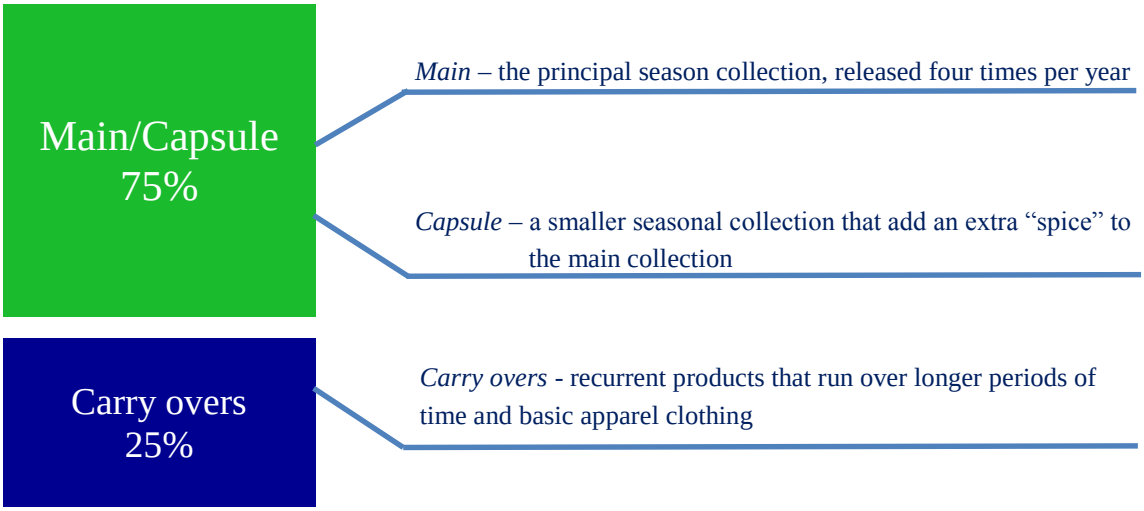


Figure 19: The product mix of company B

4.2.4 Outsourced and offshored production

Company B has approximately 50 suppliers, which in their turn possess several production facilities, and are located both in LCC in Europe and Asia. 43% of the total production volume is produced in Portugal, 35% in China,

10% in Italy, 10% in the Baltics, 1% in Vietnam and the remaining 1% in other countries (figure 20). Today, production is starting to take place in Peru.

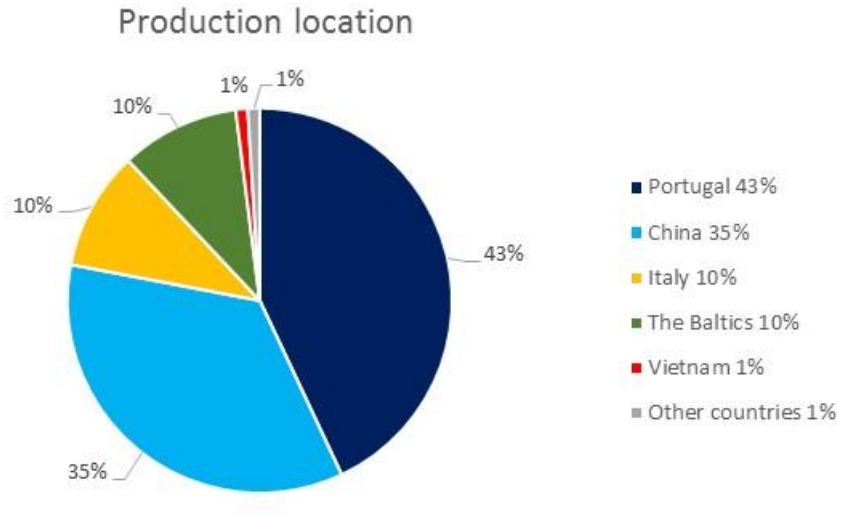


Figure 20: Geographical location of company B's production

Company B works with its suppliers both directly and through trading companies (the final decision is taken by the company). Their strategy for supplier selection is commitment and to establish long-term relationships, most of them for more than 10 years. Suppliers are selected by the company's buyers in the beginning of the design process based on manufacturing suitability for the specific product, thus ensure that the product receives the necessary preconditions. To achieve the most optimal level of quality to a reasonable price, the product is developed in close cooperation with the selected supplier. Suppliers, that fulfill the requirements set by the company, are very attractive for many competing apparel companies as well, and thus the choice of providers are somewhat limited. In addition company B is a relatively small client in terms of volume, which makes long-term relationship extremely important. As company B primarily competes with the product itself, establishing long-term relationships with its suppliers ensure the company that the demanded quality and precision is met. The number of available suppliers differs depending on product and production complexity. However, company B isn't interested in swapping suppliers to receive the lowest possible price, which is both time-consuming and costly. *"To reduce the overall risk for our company we see the need of finding new ways to increase the risk of our existing key partners rather than finding new ones".* The authors believe that it is among existing one can find that confidence. The company requires its suppliers to sign and implement their Code of Conduct and once a year they conduct monitoring in full. During this control the company performs a scorecard on each supplier where quality, deliveries, CSR, cost development, organization and flexibility are measured. The

company finds it extremely important to be open-minded when choosing suppliers for its production, in order not to shut out alternatives before evaluation is made. Today, production is beginning to take place in Peru, which the company finds very exciting. Generally, the easiest way to find new potential suppliers in many cases is through their current suppliers' contacts and recommendations. The introduction process of new suppliers is displayed in figure 21 below.

Figure 21: Company B's introduction process of new suppliers

4.2.5 Factors influencing location

There are a number of factors that company B takes into consideration when selecting supplier location. These have been divided in primary and secondary factors by the company depending on influence for a production localization decision:

Primary factors

- **Production technologies and country specific capabilities** - One of the two most fundamental factors for a supplier being selected is that it has the capabilities and competence to produce and deliver the product at the required level set by the company. There are a large number of suppliers in China which can produce apparel goods, however far from many of them can produce company B's products.
- **Quality** - The supplier must live up to the expected quality standards regarding product quality and delivery reliability (e.g. quality of the stitching, fit and no threads hanging). Quality and long-lasting products are extremely important aspects for the company to meet customer expectations. Company B isn't willing to compromise on the quality of its products.
- **CSR** – Company B mainly chose suppliers that are in the forefront within sustainability initiatives. As company B is a member of the non-profit organization Fair Wear Foundation, which works to

improve the workplace conditions in the textile industry (Fair Wear Foundation, 2014) their suppliers have to comply with the foundations "Code of Labor Practice"

Secondary factors

- **Costs** - After assured that the supplier met the quality standard required from company B the focus is on price. The company also finds that difference in costs between a top quality-supplier in China isn't particularly remarkable compared to one in Europe.
- **Tariffs and tax incentives** – Company B takes these factors in consideration but not crucial for the decision.
- **Political, Exchange rate and Demand risk** – These factors is a part of the evaluation but not the most crucial one mentioned.
- **Development in LCC** – Company B has seen cost changes in LCC and especially China but their existing manufacturing in the country is necessary for some of its product categories, thus dependent on the specific capabilities and re-localization isn't possible.
- **Lead time** – Lead time isn't the factor of highest importance when the company makes its decision for production location, they rather chose location for its specific capabilities and quality precision.
- **Cultural challenge** – The communication ability and language skills of the manufacturer has importance when location for its production is decided.

4.2.5.1 Production technologies and country specific capabilities

A country for sourcing is mainly selected for its specific resources/capabilities such as competence and knowledge within a special apparel segment, which mostly is directly related to the geographic location (e.g. New Zealand is well-known for its wool). Thus, the garment decides where the supplier is located. Another important aspect to consider is that the variety of supplier level within different countries varies greatly, especially in China where you can find suppliers conducting in a range of production categories such as low-cost production to high-end technology. The production cost for the most advanced and attractive suppliers in China doesn't differ a lot from the European ones.

China is renowned for their capabilities to produce knit- and outwear. Company B means that other countries have difficulties to compete with China's knowledge, skills and price within this apparel segment. Suppliers in China also live up to the requirements set by the company and are less costly regarding production than Europe. Important is that suppliers in addition to capability for producing the specific product also complies company B's second main criteria, to proactively work with sustainability questions.

To produce garments made of tricot and knitted, such as shirts and suits, mainly suppliers located in Europe are selected. The specific capabilities of Italy to produce leather, shoes and bags, has made them the first hand choice in these product categories. Also Portugal is a country capable of producing leather goods and is still quite broad within the confectionary industry. Company B considers Portugal's knowledge and capabilities within the fashion industry and its relatively low production cost, compared to other European countries, as an attractive option to source from.

4.2.5.2 Quality

Company B is in the upper mid-price segment, thus their customers are not as price sensitive as those in lower price segments. Consequently the company primarily competes with the product itself and not with price and they aren't willing to compromise on the quality of its products. Therefore it is really important that all of their suppliers meet the required standards and requirements for production, delivery and quality. Establishing long-term relationships with suppliers are of great importance and have resulted in the involvement of the suppliers' design process. Company B argues that they rather pay a little extra for products that better meet their expected standards and high quality. In addition, they experience a wide range of suppliers in China from low-cost producing ones without any further knowledge to those with the highest technology available. According to company B, quality isn't country specific rather supplier specific. The company's suppliers in China maintain the same quality standards as those in Europe.

4.2.5.3 CSR

Company B spends an enormous amount of work on CSR and it permeates its entire organization. All of the employees within the company consider CSR in their daily work. CSR is a central factor that the company takes into consideration when choosing suppliers and localization for its production. Company B has for example refrained from production in Bangladesh in the foreseeable future, due to the accidents with collapsing fabrics and poorly managed working conditions, which they cannot stand for. The company considers themselves to be a too small player in the global textile industry, compared to the worldwide chains, to be able to create difference in Bangladesh. They as a company want to contribute and to participate in the development for better conditions in countries that produce apparel goods and means that it is a hygiene factor within the industry. The CSR initiative is also something that their customers expect them to actively work with. The company publish a very comprehensive sustainability report every year to demonstrate its work in the field but worth to mention is that they doesn´t use its CSR initiatives to gain competitiveness.

4.2.5.4 Costs

The cost of producing a certain garment is taken into consideration when evaluating the overall picture of a supplier. Since company B competes with its product before price, the capability and competence is of higher importance than cost in the end. The company explains that they rather pay a bit extra for well-executed products where the supplier fulfills their requirements, than switch to cheaper providers. Following their choice to involve the suppliers in the design process they are not interested in switching suppliers to achieve the lowest possible price. Long-term supplier relationships avoid additional cost for a switching process of a supplier.

Company B finds it difficult to execute a cost break-down analysis of their products as it varies significantly from product to product. One product might be made of an expensive and/or rare material that is by far the largest cost parameter, and another product is made by detailed needle- and handwork and then production execute the largest cost. However, company B finds that the direct material cost is very similar regardless of the geographic position and that the direct labor cost often is of greater variance between China and Europe. Although, the company means that a supplier of its required level regardless geographical position doesn't result in a main cost difference for production.

Company B uses ocean freight for approximately 82 % of their products produced in Asia, thus the transportation cost is only a couple percent of the total cost per garment. To avoid more expensive long distance freight by flight, company B tries to schedule sufficient lead time to enable boat shipments, which can take up to 7-8 weeks. For Europe transportation is executed by truck. Company B would like to use more transportation by train for its proximity suppliers but it is a too expensive alternative today.

4.2.5.5 Lead time

Lead time is not of the highest importance for the company, with the fixed order cycle and advanced planning of orders, as they know when to order. The detailed planning cycle enables them to avoid overtime runs and production peaks, thus able to initiate optimal delivery. Company B means that lead time can vary significantly depending on the supplier's location, type of product produced and the quantity of orders for the period. Furthermore, they mainly use transportation by boat from Asia, which requires thoroughly planning by the company if the products are to arrive on time. The products within their basic assortment, where the majority of the money is earned, have long lead time and are mainly sourced from Asia. From their selected suppliers in Europe and China, the company has experienced differences in lead times. The combination of the location of the supplier in

Europe and their capacity gives a shorter lead time, approximately 16 weeks, compared to Asia's 24 weeks. One main contributor is naturally the difference in distance and thereby the time for transportation is shorter, but also the infrastructure and how the factories are constructed affect the lead time. The shorter production lead times and transportation times has led to that company B advantageously using European supplier for second complementary orders (products with high demand), especially Portugal. Since two years, company B has entered partnership with a number of the largest fashion retailers in Sweden, which resulted in significantly larger second complementary orders (before a dozen and now hundreds). Company B is a relatively minor client at their suppliers in China, thus they have to order long in advance. The good suppliers are often very attractive consequently there is a waiting time. The company's relatively small order volume and no spare production capacity in China available, is another reason why they use suppliers in Europe for their second complementary orders, primarily Portugal.

4.2.6 Sourcing in the future

According to company B, has the development in China not affected their current localization of suppliers yet. However, they think that in three to five years the situation will be different. Thus other locations for production is continuously evaluated in order to be prepared when needed. *"As different countries develop at different rates a company should have a decent idea of what is happening in the market, where trends are going, etc. in terms of production".* Bangladesh will however never be an option for production due to the turbulence the recent years and the additional efforts in CSR that production there would imply. As mentioned earlier, the company finds open-mindedness as an important factor for new alternative localization for production, which the recently started production in Peru is a result of. *"Peru is our latest geographical country for production and we are very exciting about the coming future".*

The company finds it difficult to access suppliers for some of its product categories due to the limited number of available ones and the company's relatively small order volume. Thus it is important to constantly research the market, have foresight for changes and be open for new alternatives to reduce the risk of lacking suppliers. At the moment company B is struggling to find suppliers for production of light woven garments, where the supplier selection is a challenge.

4.3 Company C

4.3.1 Company description and competitive/overall strategy

Company C was founded in the late 1800s and is Sweden's leading department store chain. Company C reported a turnover of around 4 800 MSEK year 2013 and the company has approximately 3 000 employees. The company's main strategic focus is offering the customer a broad assortment (44 000 articles) of products, rather than having the lowest price on the market. Their business idea is that customers should be able to find everything under one roof. A recurring issue is whether the customers need the broad assortment of products or if the company should focus more on parts of their assortment. However the broad assortment is motivated by a solid range of basic products which is complemented with other products that the customer can treat themselves to. The identified major end customer is a mother aged 45-55. The portfolio includes a unique mix of fashionable and affordable products within women, men and children fashion, which accounts for 38% of the total revenue, beauty products which account for 30% of the total revenue, home products which account for 25% of the total revenue, and entertainment products which accounted for the remaining 7% of the total revenue 2012. The company's core products are their own brands, which are represented in all of their around 120 stores; 80 in Sweden and 40 in Norway. In addition, external apparel brands (national and international) are represented in the company's three Swedish flagship-stores in Stockholm, Gothenburg and Malmö. The stores are divided into five different categories (depending on store space and revenue), which determine the product range.

Company C is a part of a large corporation, also including other well-known Swedish retail chains. Thus company C's key figures are difficult to extract from the cooperation's key figures. However, from the interview it was stated that company C's revenue was 4 800 MSEK 2013, with a profit of 3%. Further the supply chain manager expressed that company C isn't making the money they would want to.

4.3.2 Supply chain

Currently company C is transforming their supply chain to become more: customer oriented, transparent, sustainable, efficient and flexible. It will focus on becoming more responsive to respond to changes in demand.

Company C has a typical retail business model where the bought volumes are determined through forecasts and speculation. The company has ordered a new forecasting system to increase accuracy of the forecasts and thus decrease the amount of lost sales and markdowns. Today approximately 20%

of their total volume is markdowns. The forecast accuracy is highly important for company C as they take all the risk with their own retail. The time from planning to the products are available in stores is around 14 months. The value chain of company C's private label products starts with the procurement of raw material. The main component is cotton, and in an attempt to reduce the impact on people and environment the company is part of the better cotton initiative. Goods are bought through the company's five purchasing offices around the world. Purchasers and quality controllers are stationed at these offices and their main task is to locate suitable suppliers and take reference products. Negotiations with suppliers are conducted by personnel from the Swedish headquarters. Once company C has entered into a contract with a supplier it is the purchasing offices task to control that the supplier follows the established rules. Company C's central warehouse is supplied by 483 suppliers from 38 different countries. The products are transported by boat from Asia and truck from Europe. Finally the products are sold through the company's 120 stores. Their largest market is their domestic Swedish market which account for roughly 70% of the total revenue, and the remaining 30% are sold in Norway.

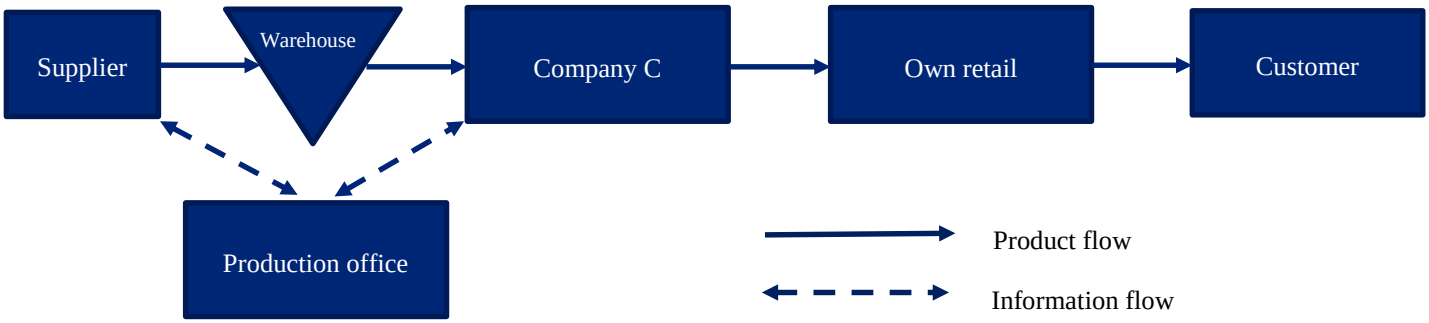


Figure 22: Company C's supply chain

4.3.3 Product mix and planning cycle

Regarding company C's apparel products 70-75% of them are seasonal. The remaining 25-30% are more basic products which are recurrent in most of the collections. Today the company does not have any standardized way of determining when a product should be phased out of the assortment. Company C divides the year into four different collections. The production cycle starts with planning of products and volumes and ends when the products are available for sale in the stores. The planning starts 14 months in advance, and 8 months before the products are to be sold orders are placed to Asian suppliers. Compared to the Asian suppliers', orders are placed 6 months in advance to European suppliers. The ordered volumes are determined using historical sales data, however the precision in these volumes vary and both large volumes of marked-down products and lost sales occur.

Besides differentiating their apparel products as seasonal and more recurring basic products, company C categorize their products based on product flow. The products are either considered to have a faster and more flexible flow or a slower and more cost-efficient flow. There are both seasonal and basic products in both categories, however when generalizing the faster and more flexible flow mainly consists of complementary orders of seasonal products from Europe. The products with a slower and more cost-efficient flow are mainly the first placed orders of seasonal products and basic products, sourced from Asia. However, company C believes faster and more flexible flows can also be achieved from Asian suppliers with better supplier relationships.

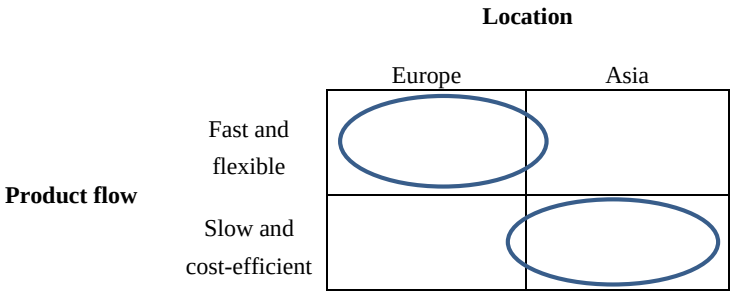


Figure 23: Categorization of products based on product flow

4.3.4 Outsourced and offshored production

Company C's private label products are sourced from a total of 482 suppliers who in total control 847 factories. The majority of the factories are located in China (66%) and India (7%). 10-15% of the factories are located in European countries, figure 24. Historically the company's focus has been to switch from European suppliers to Asian suppliers in an attempt to reduce costs. Company C has a mix of new suppliers and suppliers which they worked with for 20 years. In average 50 new suppliers are added to the supplier base each year.

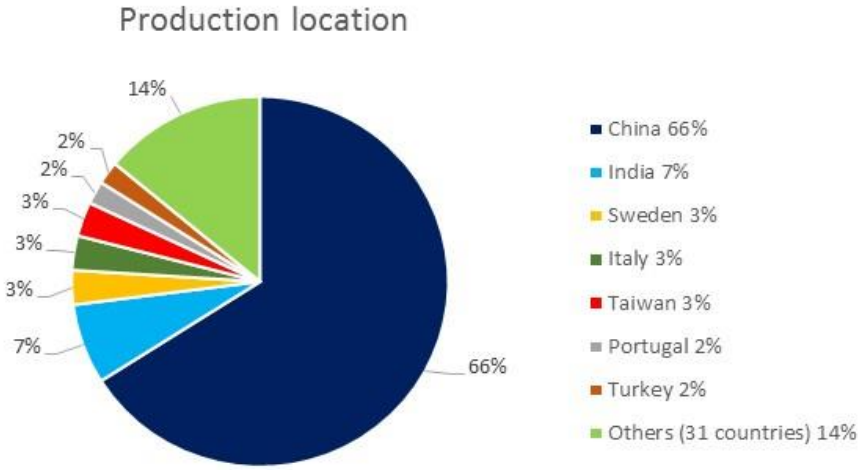


Figure 24: Geographical location of company C's production

4.3.5 Factors influencing location

The basis for company C's outsourced and offshored production is that the supplier needs to go through a supplier approval process. The logistics department, purchasing department and product development department are some of the departments involved in the process. Company C has an established form consisting of a number of factors which the suppliers need to fulfil.

- An economic point of view: the supplier needs to have good finances
- Sustainability and CSR initiatives
- Deliver a high level of quality
- Have the required type of production facilities to produce the demanded product

The supplier approval process is not the same process as selecting appropriate countries to source from. Based on the expressed importance during the interview with company C the factors included in the theoretical framework are classified as primary or secondary.

Primary factors

- **Production technologies and country specific capabilities** – When locating production the capabilities of the different countries affect company C's decision.
- **Costs –** Costs is one of the two major dimensions (production technologies and country specific capabilities above is the other) company C take into consideration when locating production.
- **Lead time –** Company C is today transforming their supply chain to become faster and more flexible, thus is lead time important when selecting location.
- **CSR –** Company C's customers are becoming more aware of CSR and thus require that of the company. Being more sustainable is also a part of company C's new supply chain strategy.

Secondary factors

- **Quality –** According to company C quality is a hygiene factor which they require from their suppliers regardless of country. Thus quality does not determine the location.
- **Culture and politics –** These factors do not affect company C's decision. However they are factors the company continuously have to work with once the location has been selected.
- **Tariffs, tax and exchange rate -** Each of these factors are included in the preliminary calculations when evaluating locations, however

they do not have a high impact on location of production. Aspects such as inflation and increases in wages are also included in primarily calculations.

4.3.5.1 Production technologies and country specific capabilities

Using Asian suppliers is always company C's primary choice when sourcing apparel goods. However some products are advantageously sourced from Europe as there are suppliers who are very good at producing the demanded product there. Company C experiences that certain countries' are better than others on certain materials and garments. For example products with a large proportion of cotton are primarily sourced from India. Chinese suppliers are mainly used for products with a high proportion of polyester which are more technically demanding to produce. Leather products are sourced from Italy, China and India. Company C calls this the product dimension of the sourcing decision.

4.3.5.2 Costs

The other dimension of the sourcing decision is a cost dimension. These two dimension are both taken into consideration when deciding where to locate production. Alongside their broad assortment of products, company C also want to have a competitive price which the price dimension takes into consideration. As visualized in section 4.3.4 the majority of production is located in Asia which historically has been motivated by the low costs. However today when taking the total costs into consideration, not only the direct costs from the suppliers, Europe has also become attractive to source from. The additional cost of controlling and ensuring a high quality from Asian suppliers is higher than from European suppliers. As a result of the lower additional costs associated with the European suppliers company C has begun sourcing more products from Europe. These suppliers are primarily used as secondary/backup suppliers to enhance and improve product flow, which was one of the ways they categorize products by. Company C sees a large potential in the European transportations, today they have better contracts for ocean freight from Asia than shipping by truck from Europe. The first order/batch of apparel goods are often sourced from Asia and then European suppliers are used for the complementing second, third and fourth orders.

4.3.5.3 Lead time

Company C has acknowledged a number of benefits following shorter lead times from production in Europe. The increased accuracy in product supply contributes to reduced lost sales and markdowns. The speed from Europe allows company C to better react and see what the market demands. They

have thus deliberately placed production in European countries to benefit from reduced lead times. An example is the production of knitwear, which they now source from Turkey instead of China as the production doesn't differ much from each other. Placement of orders are affected by aspects such as the time of year, e.g. company C tries to avoid placing orders from Asia close to holidays, for example the Chinese new year. They also try to avoid placing orders from Asia that are delivered during the rainy season. Thus the products risk being damaged when lying on the dock.

4.3.5.4 CSR

CSR is an area which has increased in importance for company C the previous years, and is now one of five main areas in their overall company strategy. Studies conducted by the company shows that 57% of their customer keep sustainability in mind when they shop at company C's stores. Following the increasing importance of CSR, company C has adopted Business Social Compliance Initiative (BSCI) code of conduct. This code of conduct has thus an impact on the choice of location as it focuses on: prohibition of child labor, prohibition again discrimination, regulations regarding wages, requirements on health and environment, etc. In 2012 company C sourced from 19 countries that BSCI listed as risk countries[6], which require more control and audit. Thus CSR/sustainability highly affects the location of outsourced and offshored production.

4.3.5.5 Quality

It is important for company C that their products keep a high level of quality, thus the suppliers evaluation includes this aspect. An aspect of quality which was mentioned during the interview was how much a sweater shrinks when washed. Company C means this factor is more supplier related, rather than location. Thus company C expresses that quality is not a factor when selecting location for outsourced and offshored. The quality of products are affected by the technology of the machines, thus the suppliers machines have to be in a certain condition. Generally company C experiences that European suppliers deliver products with higher quality than Asian suppliers

4.3.5.6 Culture and Politics

Culture is not a factor which directly affects company C's choice of location for outsourced and offshored production. However when supplier/location has been selected culture is an aspect they have to take into consideration and work with. They have worked proactively with structures to reduce the risk

[6] In 2012 company C had production in 19 risk countries. The countries are evaluated based on: Voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption (www.bsci-intl.org).

of locating production in corrupted countries. Regarding political stability company C follows BSCI's code of conduct and will not source from countries where there is a likelihood that the government will be destabilized for different reasons.

4.3.6 Sourcing in the future

As described in the previous sections company C has historically focused on cost and thus located outsourced and offshored production in LCC in Asia. However they have experienced that the total cost difference between Europe and Asia has decreased, thus Europe has become an interesting alternative to Asia. The choice to source more from Europe is also motivated by the large amount of markdowns weighing on the company. The short lead time from Europe helps them better react to customer demand and replenish products. It will mostly be complementary orders of seasonal products that are sourced from Europe.

Company C will eventually implement a forecasting system for the 44000 articles. This system will help reduce markdown and lost sales. Further the system will help phase out products which will simplify sourcing, they will also try to consolidate orders. For example today towels are bought from 5 suppliers, if consolidated it will require less resources and will be easier to control.

4.4 Company D

4.4.1 Company description and competitive strategy

Company D was founded about 15 years ago. The company develops and distributes fashion, clothing, cosmetics, accessories and jewelry. Sales are mainly conducted in Scandinavia and net sales totaled around 2 600 MSEK in 2013. The company's net sales has decreased the past five years displayed in table 8 below. The EBIT, operating margin and annual profit have been negative for the same period except for 2010, were the key figures turned positive.

The vision is to offer customers the ultimate shopping experience through its three different business areas and has approximately 1 400 employees. The company has range of 350 - 400 stores (around 150 are operated by franchisees) located in major cities, towns and shopping centers. Company D's three business concepts are:

- *Concept A*
  Concept A was founded about 20 years ago and offer men's fashion wear focused on well-tailored garments and smart casual fashion. The

identified end customers are men aged 25-55. The concept's range consists of strong proprietary brand mixed with external brands in the upper mid-price segment, with a distinct profile in the volume segment and with a strong emphasis on service. Sales are conducted in their webshop and in their around 80 stores; 70 in Sweden (operated both by company D and independent franchisees) and 10 in Finland (operated by company D). Net sales amounted to approximately 550 MSEK in 2013.

- *Concept B*
  Concept B's first collection was launched in about 40 years ago and is a leading brand and store concept for baby and children's wear in the quality segment of the Swedish market. The concept is today company D's largest and its identified end user are children aged 0-9 but the end customers are the children's parents, grandparents as well as family friends. Concept B is well-known for its high quality, design and functionality. Sales are conducted in around 140 stores, which 80 are operated by franchisees, and through its online shop. Concept B is currently established in eleven markets, where Sweden is the main market followed by Norway, Finland and England. Net sales amounted to approximately 500 MSEK in 2013.
- *Concept C*
  Concept C is a leader in the luxury goods and premium segment and offers a distribution platform in strong marketplaces for national and international brands. The concept's focus is on the customer interface and on providing high-quality product ranges and store environment. Sales are conducted in two departments store in Stockholm and Gothenburg, with 45 stores in total and net sales amounted to approximately 900 MEK in 2013. The stores offer fashion for women, men and children, as well as accessories, jewelry and cosmetics for customers demanding top-class service, knowledge and quality.

Table 8: Key figures from company D's annual report 2013

	2013	2012	2011	2010	2009
Net sales (MSEK)	2600	2800	3000	3100	3200
Operating profit, EBIT	-600	-300	-510	50	-640
Operating margin (%)	-20	-10	-15	2	-20
Profit for the year (MSEK)	-630	-330	-450	30	-660
Profit margin (%)	-20	-10	-15	2	-20

4.4.2 Supply chain

Company D has approximately 130 suppliers in 10 different countries, which in their turn possess several production facilities, and are located both in LCC in Europe and Asia. 57% of the total production volume is produced in China, the remaining volume is divided between the following countries; Bangladesh, India, Vietnam, Pakistan, Turkey, Egypt, Lithuania, Romania and South Korea. Company D's fundamental strategy for supplier selection is to establish long-term and personal relationships to ensure that the suppliers are committed to produce their products with the highest quality and thus be prioritized by the supplier. Company D wants to achieve increased flexibility, lead time reduction and full control of the production, regarding product safety, labor conditions and environmentally impact, when they establish their supplier structure. As the company primarily competes with the product than price and thus want to establish long-term relationships with their suppliers to ensure quality they are not interested in frequently swapping suppliers to receive the lowest possible price, which is both time consuming and costly.

Company D has a typical retail business model where the purchased volumes are determined through speculation. Miscalculations can result in loss in potential revenue and stockout when a too small production volume is estimated. On the other hand, if a too large volume is ordered the risk increase for product obsolescence and clearance sale. The overall financial risk is on each concept. The time from design and planning to the products are delivered and available in the stores is approximately 12 months, this applies for both minor changes of the fashion items and the creation of entirely new pieces. The value chain of company D's private label products starts with design and planning at their headquarters in Stockholm and are executed continuously throughout the year. Ten years ago, the company had two main collections, Fall/Winter and Spring/Summer, but today they have ten drops during the year instead. The drops result in a continuous new range available in the stores. Thereafter, the company places orders to their respectively suppliers, which start to produce their demanded volume. Company D has established two new production offices in Hong Kong and in Dhaka, Bangladesh, which facilitates contact with current and potential suppliers, quality controls and attendance at their suppliers' production facilities. The finished products are then transported by ship from Asia to Gothenburg and then further to the company's central warehouse in Borås. From producers in Europe transportation is conducted by truck. In Borås the products are cross-docked and further distributed to its retail stores across Scandinavia.

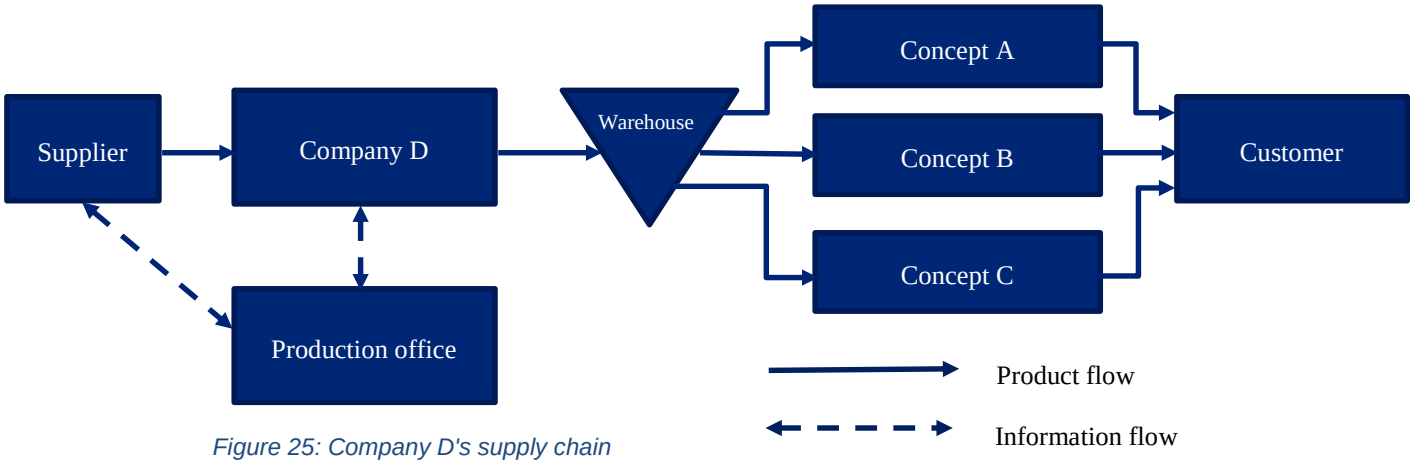


Figure 25: Company D's supply chain

Finally, the products are sold through the company's approximately 90 concept A stores, 140 concept B stores and 45 concept C stores (figure 26).

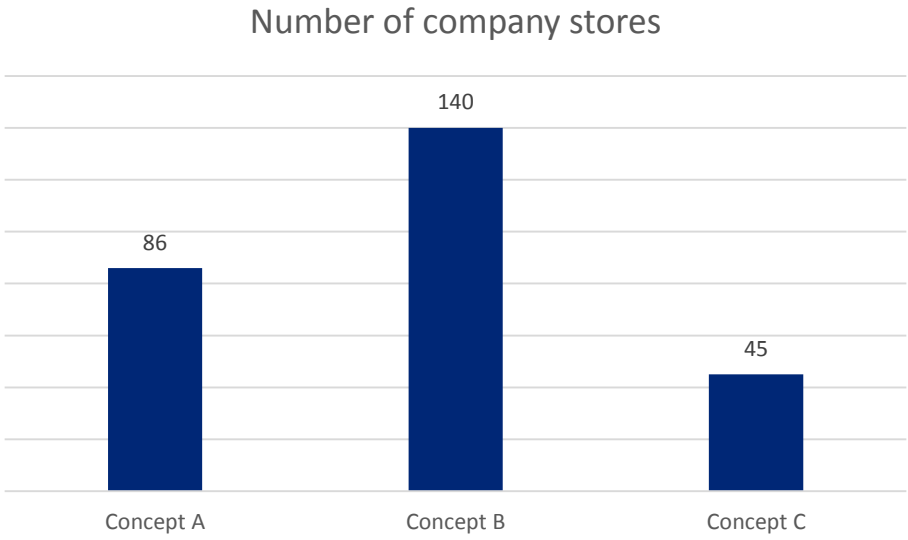
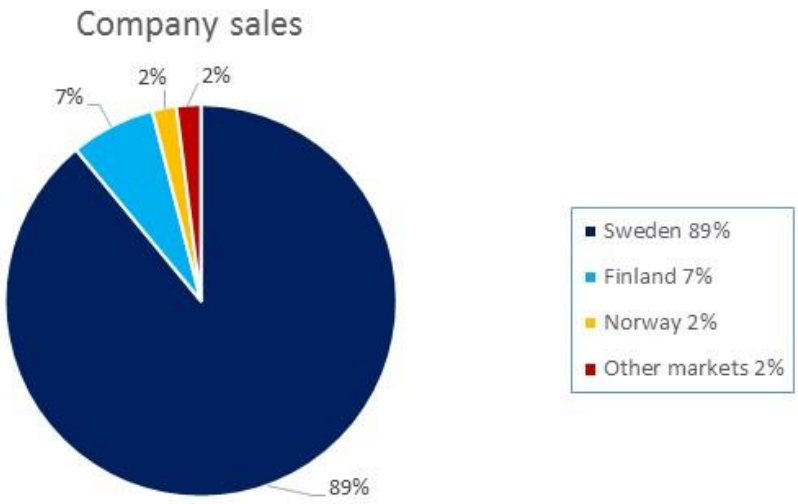


Figure 26: Number of company D's concept stores

Company D's largest market is their domestic Swedish market, which account for 89% of the total revenue, Finland for 7%, Norway for 2% and the remaining 2% in other markets (figure 27).

Figure 27: Geographical location of company D's sales



4.4.3 Product mix and planning cycle

Company D designs and produces four collections each year: Spring, Summer, Autumn and Winter. Their different collections are constructed according to the triangle below (figure 28). The broad base of the product mix consists of NOOS (never out of stock). These are clothes that the company knows they are going to sell large volumes of, have consistent design and basic clothing with low degree of fashion (e.g. socks and underwear). The order volume of NOOS is determined by forecasts with a lead time of 9 months and these products have allocated production capacity at their supplier's facilities. When demanded volume is based on forecasts there is always an increased risk for markdowns and loss of revenue because of stockout, which is a recurring problem within the textile industry.

The middle section consists of seasonal clothes, which are more complex and expensive than the ones in the NOOS category. The lead time for these clothes is approximately one year from design and planning to delivery. Company D creates a budget for each fashion item within the category around nine months before it reaches the store. Orders are also placed nine months before delivery. Planning is of great importance for this category due to essential difference in transportation lead times when using boat freight (e.g. reduced speed, transshipment along the route and weather conditions). The first order is mainly produced in Asia, thus slower flow and more cost focused. The second complementary orders are produced in Europe due to a faster flow where the company has allocated fabrics and capacity at their supplier in advance. This increase the risk for additional costs if the season product doesn't sell as

forecasted (e.g. markdowns) or loss in sales if a second complementary order isn't planned and the product is highly demanded by customers.

The products in the top are categorized as trend. They are speculative products, which the company has decided to produce more promptly to latch onto an emerging trend in the market. These products have a lead time of 8 weeks from decision is made to delivery and are mainly sourced from Europe. The trend products have significantly shorter lead times, which result in lower start margin, but this is taking in by sale at ordinary price and less markdowns, thus a higher margin in the end. These products also require a faster supply chain strategy. A part of the company's total annual budget has been reserved for this category and potential second complementary orders (popular items sold more than expected).

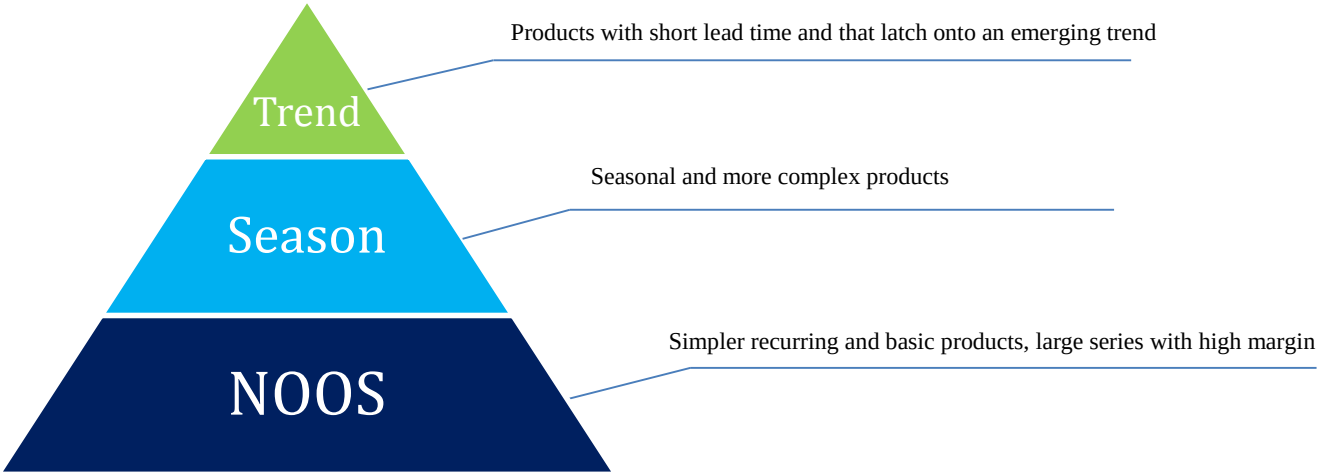


Figure 28: The product mix of company D's collections

4.4.4 Outsourced and offshored production

Company D divides suppliers into four different categories depending on their specific role in the production process of its products:

- *Basic supplier* (e.g. makes the standard jeans)
- *Niche supplier* (e.g. makes special washing of the denim trousers)
- *Service provider* (e.g. makes value-added activities in addition to the actual production such as sourcing material, product development and assisting throughout delivery)
- *Proximity supplier* (e.g. shorter lead time, smaller production runs and more expensive)

Depending on category they are evaluated and rated differently, e.g. basic more by cost than quality and proximity more on delivery performance than cost.

Company D is a minor actor with relatively small order volumes in a global perspective, thus it is important for the company to be an attractive client and work with long-term relationships. Company D finds it difficult to locate skilled suppliers in China, as renowned suppliers are very attractive for many of its competitors as well, which enable these suppliers to choose between potential clients. This is one main reason why company D need to order far in advance. Concept A, with its very innovative blazers, is a way of attracting skilled and popular suppliers that want to be in the forefront of the industry.

Company D works with a three years principle, where new suppliers are gradually allocated more capacity and responsibility. In other words, they work with long-term and personal relationships with its suppliers. The company executes continuous evaluation and rating of its suppliers' current and development performance after each collection to insure that the company's standards are met. Current performance is estimated by total cost, samples, quality of production, speed of delivery, compliance and communication. Development potential is evaluated on commitment to customer, fit to the company's need, technical capability, ownership/financial stability and market/region attractiveness. If complications with a specific supplier are discovered, the company rather tries to improve the situation than swapping supplier, which is both time consuming and very costly. If a supplier has severe deficiencies according to company D, they establish a so-called cap. Cap is a developed plan that describes what the supplier needs to improve and when actions are supposed to be completed. Company D spends more time on checking compliance, quality and production facilities in newly established supplier relations than in long-term ones. The company has thereby constant communication with its suppliers to ensure that they follow the company standards. Attendance of its own personal staff in its suppliers' production facilities is of great importance.

The company has zero tolerance rules, where collaboration ends instantly, if the supplier performs:

- Sandblasting (trashing of jeans).
- Child labor.
- Bounded labor.
- If a contracted supplier outsource production to subcontractors without Company D's knowledge.
- Processes and routines for handling of chemicals aren't fulfilled.

In some cases, the company is highly dependent on a specific region and/or supplier, thus discussions and negotiations regarding production conditions and costs have to be taken in cooperation with the supplier.

4.4.5 Factors influencing location

There are a number of factors that company D takes into consideration when selecting supplier location. These have been divided in primary and secondary factors by the company depending on influence for a production localization decision:

Primary factors

- **Production technologies and country specific capabilities** - The most fundamental factor for a supplier to be selected is their capabilities and competence to produce the company's demanded products.
- **Quality** - The supplier must live up to the expected quality standards regarding product quality and delivery reliability set by the company. Company D mainly competes with the product itself and not primarily with price, thus the product quality is a decisive factor.
- **CSR** - Company D's suppliers have to apply the BSCI code of conduct[7] to be accepted as a provider. There is of great importance that the supplier follows the company's guidelines regarding sustainability (e.g. the better cotton initiative) and labor conditions.
- **Lead time** - The proximity to the market and their production offices is of main importance for the company's second complementary orders and trend collections, which reduce the transportation time and thus the possibility to quicker react to trends in the market.
- **Costs** - Once assured the suppliers meet the quality and delivery requirements, the focus is on price.
- **Tariffs and tax incentives** - If a country with required level of capabilities and quality is getting free of duty to Europe, company D would definitely evaluate to relocate its production as they newly made to Bangladesh and Pakistan.

Secondary factors

- **Development in LCC** – Company D has seen major changes in labor costs in Asia, thus the cost difference compared to many European countries isn't significant anymore.
- **Cultural challenge** - Communication ability, mindset and management is of importance for the company when choosing location for production. India is mainly chosen by the company as a manufacturer for their ability in this aspect.

[7] BSCI (Business Social Compliance Initiative) is an initiative of the Foreign Trade Association (FTA) in response to the increasing business demand for transparent and improved working conditions. The initiative unite 1 300 companies around one common Code of Conduct and support these by providing a step-by-step development-oriented system towards building an ethical global supply chain (BSCI, 2014).

- **Political, Exchange rate and Demand risk** – These factors is a part of the evaluation but not the most crucial for its decision.

4.4.5.1 Production technologies and country specific capabilities

Directly related to the capabilities and competence of the suppliers is the geographic location according to company D. Every region and supplier has its specific capabilities and strengths, which need to be taken in consideration when choosing supplier. Turkey is skilled at jeans production and has advantageous lead time. Bangladesh and Pakistan has newly become duty-free to the EU, thus the company places more of its demanded production volume in these countries because of their favorable condition.

India as a supplier is mainly chosen for its shorter lead times, which is approximately 4,5 months, compared to 9 months in other Asian countries. Company D describes the shorter lead time in India as a result of management, mindset and personal relationships where they prioritize the company. India is also selected as a supplier for its complementary second orders, especially since the suppliers in the country prioritize them as a client.

4.4.5.2 Quality

Company D is in the mid-price segment, thus their customers are not as price sensitive as those in the low-price segment. Consequently they primarily compete with the product itself and therefore all of their suppliers have to meet the required standards set by the company. There is a wide range of suppliers in China, ranging from low-cost producing suppliers to suppliers with the highest technology available. This range of suppliers is also present in Europe. Thus, company D means quality in not directly country specific, rather supplier specific and thus suppliers are evaluated according to its specific capabilities and knowledge for the product needed.

4.4.5.3 CSR

When selecting suppliers CSR is a factor that company D takes into consideration. They as a company want to contribute and to participate in the development for better conditions in countries that produce apparel goods and means that it is a hygiene factor within the textile industry. Company D spends an enormous amount of work on CSR and thus attendance by their own staff in the suppliers' production facilities is of great importance. The company performs audit, visit the production facilities and ensure that employees have required PPE (Personal protective equipment), that the fire protection works and that supervisors/management treat the staff respectfully. In Bangladesh have more initiative and efforts been devoted to CSR because of the past years tragic incidents. Since 10 years, company D is a member of the international initiative BSCI (Business Social Compliance Initiative) where companies jointly work to improve working conditions in their supply

chains. Through the membership the company share a code of conduct with a large number of buyers from all across Europe, which is an advantage in the work towards suppliers, when all buyers have the same requirements. Company D is also a member of the Better Cotton Initiative (BCI), which is a holistic approach to sustainable cotton production (BCI, 2014).

4.4.5.4 Lead time

Company D has different strategies for sourcing depending on the lead time for a specific product. Products with longer lead time are primarily sourced from Asian countries and those with shorter lead time are mainly sourced from European countries due to proximity to the market. Production executed in Europe has increased the past years according to the company and this trend will continue.

As company D's products have different lead times, which is not a deliberate choice by the company, it's affected by the time for production. An advantage with the suppliers in Europe and India is their relatively short-lead time, thus second complementary orders are placed there.

For product categories with relatively short production lead time and where many different colors for each model are planned, the sourcing is made differently. For example a shirt can be sourced and produced in both China and Europe depending on color of preference. The first order is placed on certain number of basic colors from China. Thereafter some more trendy/seasonal colors, for which the demand is more uncertain, are placed from Europe 8 weeks before sale. This second complementary order from Europe gives the company extra time to speculate and analyze the market trends and thereby reduces the risk for clearance sale.

4.4.5.5 Costs

The cost of producing a certain garment is taken into consideration when evaluating the overall picture of a supplier. Following their choice to involve the suppliers in the design process they are not interested in switching suppliers to achieve the lowest possible price. The cost of production varies significantly depending on each specific product and the company always performs a cost breakdown in all supplier negotiations. Company D finds the material as the greatest cost and the one that is most important for its competitiveness. The material cost doesn't differ significantly between Asia and Europe. The production cost is the one that the company can influence the most and represents around 20-70% of the invoice from its suppliers. Cut and make varies greatly between suppliers/regions, and can in some cases be twice as high in Europe compared with Asia. The Company D's one year order cycle allows them to use ocean freight for the majority of their products,

thus the transportation cost is only a couple percent of the total cost per garment.

4.4.5.6 Cultural challenge

Culture is as a factor that affects company D's choice of supplier. The company experience difficulties to collaborate and work with some countries more than others due to differences in conflict resolution and building personal relationships. Thus you have to learn to make business in different countries. India for example has a very open mindset and management, which company D appreciates and finds favorable. Company D describes China, Pakistan and Bangladesh as the three extremes regarding differences in culture interaction.

4.4.6 Sourcing in the future

Despite the turbulence in Bangladesh with production plants that have collapsed and almost 30% loss of the country's textile production, Company D haven't left the country. But it has resulted in that they have started to look for alternatives. Company D means that Bangladesh, which production earlier was mainly based on volume and basic products is gradually taking over more and more of China's production. Today, the number of sophisticated suppliers in Bangladesh is more or less the same as in China. This is also the case regarding Vietnam. Important to mention, is the increased CSR effort (e.g. Fire-Safety in Bangladesh) the company has to spend in these two countries to ensure that the labor and working conditions are achieved to avoid negative publicity.

The switch from "textile"-China to "costly"-China, as the company describes it, and the attempt to reduce its lead time has increased the interest to source more products from Europe instead of Asia. Today, production in China is considerably more expensive than before due to a lot of reasons. The cost for labor and production has increased significantly as the textile industry in China experiences difficulties to recruit employees to the production facilities. The problem is mainly caused by the increased standard of living and educational level whereby the interest among the younger generation in China has declined. The northern part of China is taking over a lot of the production from its southern and coastal parts, where the cost of production is considerably cheaper.

4.5 Company E

4.5.1 Company description and competitive strategy

Company E was established during the first part of the 1990s and has a strong position in their established markets. The identified target customer is in the age between 20-30 years (commercially broader) and the product range is addressed to men, women and children, where men are their largest segment. The product portfolio of the company includes a mix of fashionable and sporty products and is divided in three main categories; underwear, sport fashion and other product categories. Company E sells its products through their approximately 40 company concept stores (around 20 own retail stores and 20 franchise/distribution agreement stores), 2 factory outlets in Sweden, wholesale and online web store (both their own and extern). The apparel label is positioned within the upper mid-price segment and is primarily competing with its products rather than on price. The turnover 2013 amounted to approximately 500 MSEK. The company's net sales and profit margin have been relatively stable the past five years with a smaller dip in 2013 (table 9). However, EBIT decreased significant in 2011 and 2013. The annual profit decreased noteworthy the two past years.

Table 9: Key figures from Company E's annual report 2013

	2013	2012	2011	2010	2009
Net sales (MSEK)	500	550	540	540	520
Operating profit, EBIT	20	70	80	130	110
Operating margin (%)	5	10	15	25	20
Profit for the year (MSEK)	10	50	100	90	80
Profit margin (%)	5	10	15	20	20

4.5.2 Supply Chain

Company E doesn't own any of its production facilities, thus the production is sourced from external suppliers mainly China (75%). Company E's supply chain consists of approximately 10 suppliers located in China, Turkey and India, and the manufacturing is performed in around 15 production facilities (figure 29). In addition to selling their products through distributors they also sell through approximately 40 company concept stores; 20 own concept stores and 2 factory outlets in Sweden, Finland and the UK together with 20 franchise/distribution agreement stores. Furthermore sales are conducted through their online webshop that is available in several languages targeted to customers globally. The forecast for 2014 is that the emerging online

webshop is representing 25% of the sales of their own retail business. Holland accounts for the largest share, as a consequence of the around 20 closed stores in the country, followed by Sweden.

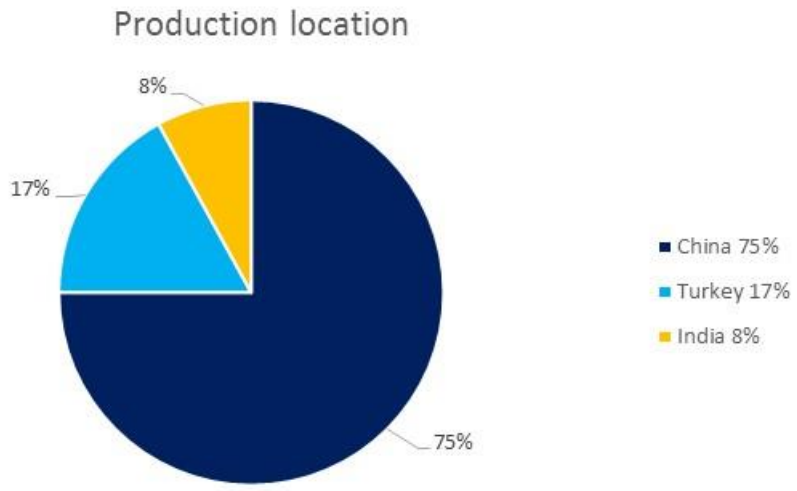


Figure 29: Geographical location of company E's production

Company E's business model is similar to the one often used in the retail industry for three of its geographical markets (Sweden, Finland and the UK) and their online web store, which are managed in-house. For these the company purchases products on speculation, and thus the risk increase for keeping inventory, markdowns and loss of revenue due to stockout. The company possesses two factory outlets, located in Sweden, that are considered to complement and mitigated the risk for products that haven't been sold. 30% of company E's products are sold in their webshop and concept stores (Sweden, Finland and the UK) are markdowns. Regarding the other geographical markets the company's business model is comparable to the one often used in wholesale. In these countries a distributor is responsible for their own geographical market performance and not the company itself, thus reducing the risk.

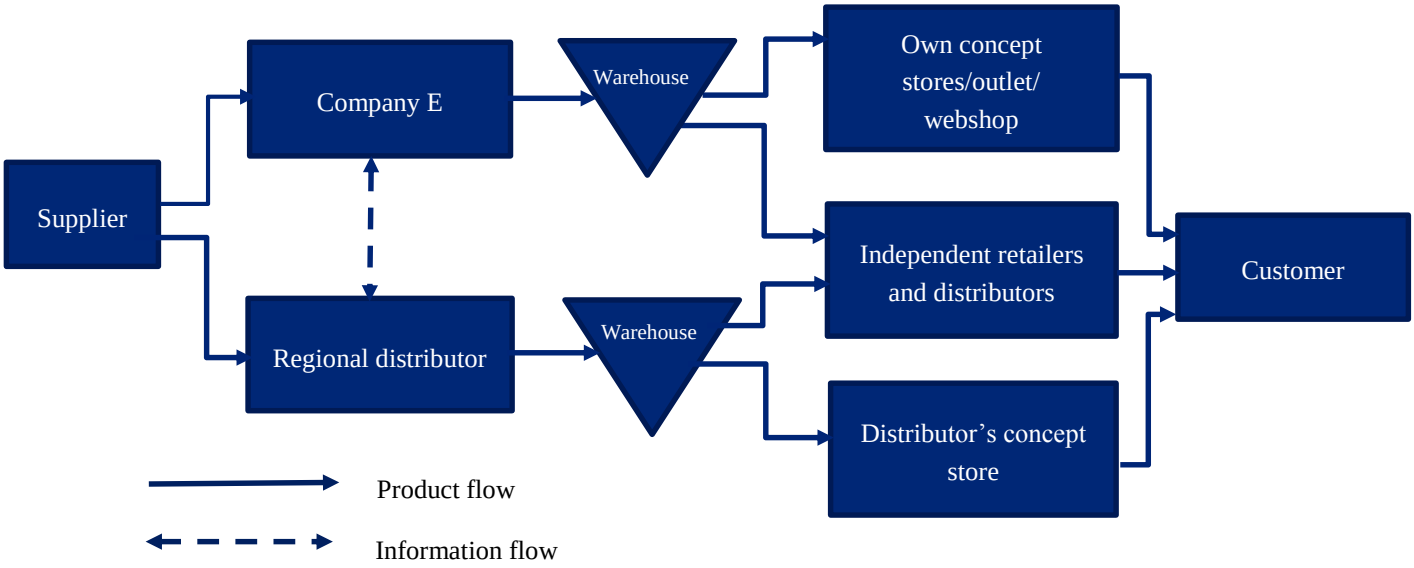


Figure 30: Company E's supply chain

Company E's main market is Holland and the Nordic. In 2013 the company acquired their Finnish distributor. The reasons for the acquisition were that it fit the company's overall strategy and that the region has a high growth potential. Today, the Finnish market consists of two own retail stores and 200 resellers and represent 7% of the company's sales. The second half of last year the Chinese market was phased out. Holland has been the largest market but after the reconstruction from around 30 concept stores to 10 the past year by the country responsible distributor, the sales have consequently dropped, thus Sweden is now the largest market. The reason for the reorganization in Holland was that the Netherlands market was over-established and the distributor had poor contract relations as well as the retail consumption in the country had difficulties in general and backed significantly.

4.5.3 Product mix and planning cycle

Company E designs and produces four seasonal collections each year: Spring, Summer, Autumn and Winter. However, delivery of the collections differs and is spread over the year. The production cycle starts with planning and design, and ends with final delivery. The product cycle takes approximately 18 months and is the same regardless of the type of product category. The company handle the design and product development internally for its core business (socks, under-, swim- and loungewear) at their headquarters in Stockholm. The sport fashion is designed in Holland and the other product categories by respective licensees. Important to mention is that their design process is made under guidelines from company E and one of its designers in Stockholm is working in close cooperation to ensure that the red thread are followed. The company thereby outsource functions when expertise or core competence isn't available in-house to achieve the most optimal result.

After the design and planning process is finished the company presents sample collections for their distributors from each geographical market at sales meetings. The distributors in turn show this for wholesale, which place orders, approximately 5 months before product delivery, based on previous sales and upcoming trends. Wholesale is company E's focus segment and where the majority of its sales are. The selling-period to its distributors is relatively long, which mitigates the risk. Once the orders are placed company E can order the demanded volumes from their chosen suppliers, in other words the volume produced has already been ordered and no risk for keeping inventory is needed expect for Sweden, Finland and the UK where company E is the responsible distributor. The business model mitigates the company's risk by purchasing from suppliers according to the customers' orders.

Company E's product categories are the following:

- *Core business (60%)*
  Company E's largest product segment and comprises socks, under-, swim-, and loungewear. The assortment is available in 16 markets and consists of products with a high level of fashion and the characteristic patterns and colors complemented with more classic models. This category is the company's main focus, especially the women collection, and to offer an attractive complementing assortment.
- *Sport fashion (11%)*
  This product category was founded about 3 years ago and available in 7 markets, where Holland represents the largest share of sales. At the moment the category consists of 5 different concepts: basic, work-out, tennis, running and sporty lifestyle.
- *Other product areas (29%)*
  The category include perfume and skin care products performed in-house. In addition shoes, bags and eyewear are included in the category but are licensed to external suppliers.

The risk in demand is reduced by producing products that is commonly used by consumers e.g. underwear and socks. Furthermore, the most insecure parameter for company E, as an actor in the upper mid-price segment, is the competition from vertical chains due to they use less middlemen and thus able to operate in a different price interval. Their possibility to offer similar products to company E's to a lower price can thereby lead to loss in market shares.

Company E uses product triangles to divide its products and these can take different shapes depending on concept and gender. In figure 31 below an example for their different underwear concepts for men is shown, which represents 69% of the company's total sales.

- Basic is the company's entry-level range and a somewhat simpler model. This concept sells mainly in pack of three and NOOS is available within the concept.
- Core is the company's main business and their most well-known underwear concept and accounts for 67% and NOOS for 10-15% of these.
- Heritage has a somewhat higher price image compared with the other two mentioned and the focus on NOOS is extremely small.

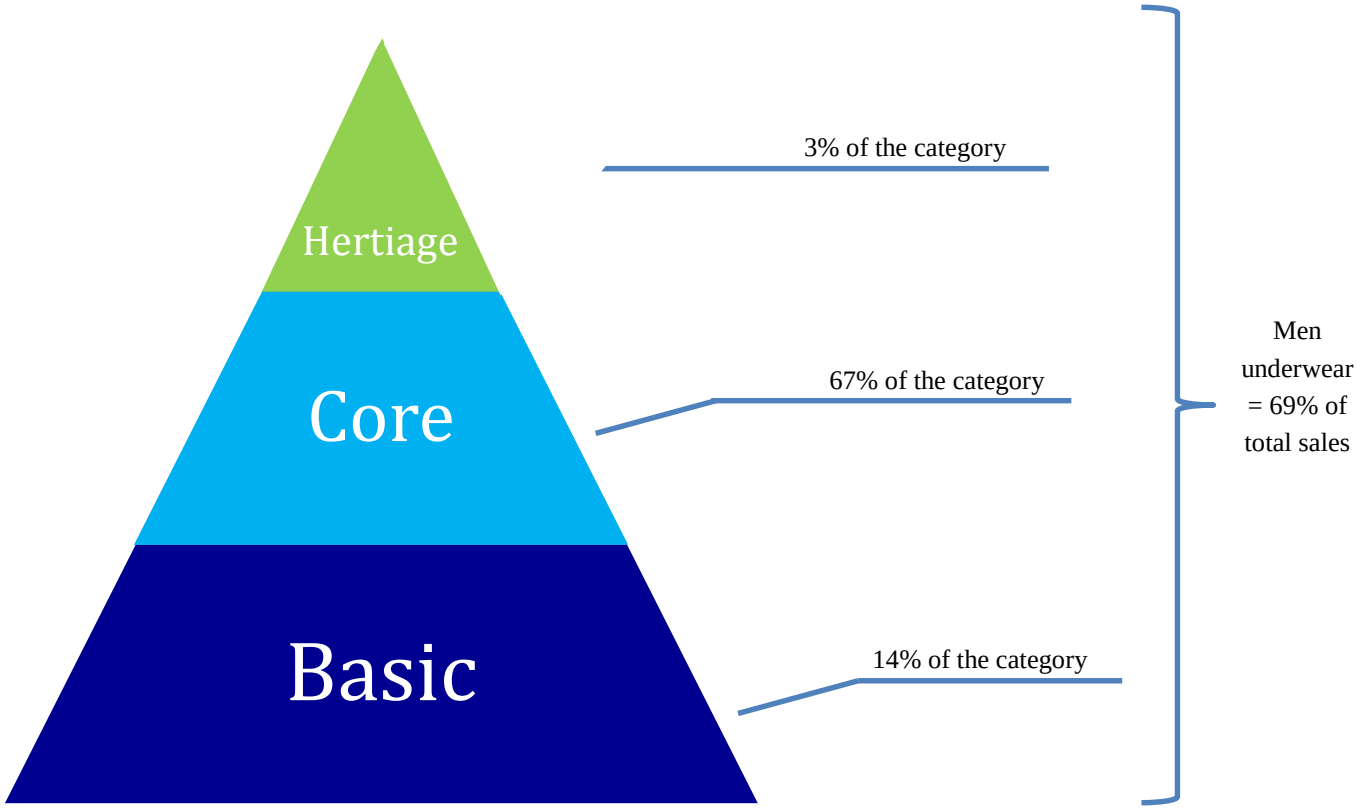


Figure 31: The product mix of company E's men underwear concept

4.5.4 Outsourced and offshored production

Company E's suppliers are located both in LCC in Asia and Europe. 90% of the total production volume is produced in China and the remaining 10% in Turkey and India. Bangladesh has been a supplier for the company earlier but since the company products requires specific machine parks and quality knowledge, which the country cannot live up to, it's not an active region for supply at the moment. The company has 15 suppliers in total and is producing garments in 18 fabrics in the three countries mentioned above. Company E's fundamental strategy for supplier selection is not have too many as they want to establish long-term relationships to ensure that the suppliers are committed to and capable of producing their complex product portfolio with the highest

quality. As company E is not interested in frequently swapping suppliers to receive the lowest possible price, which is both time consuming and costly, long-term relationships is highly important. The company describes their contiguously evaluation process of suppliers (lead time, knowledge and cost) as a purpose to reduce the overall risk. The challenge is to find the balance of production and thus not weigh too heavily or insufficient with a product segment at one supplier. According to the company, this affect its negotiating position and quality may be compromised

4.5.5 Factors influencing location

There are a number of factors that company E takes into consideration when selecting suppliers. These have been divided in primary and secondary factors by the company depending on influence for a production localization decision:

Primary factors

- **Production technologies and country specific capabilities** - The most fundamental factor for being a supplier is to have the precise capabilities and competence to produce and consolidate the specific product and quantity needed. The suppliers have to possess product expertise within each specific product category (e.g. special skills regarding underwear and not be an overall producer).
- **Quality** - The supplier must live up to the expected quality standards regarding product quality, fit and delivery reliability. The supplier must manage the company's demanded delivery period with high peaks.
- **Lead time** – The proximity to the market is of main importance when the company chose location for its production, which reduce the time for transportation and thus the total lead time for its products.

Secondary factors

- **Development in LCC** – Company E has seen major changes in especially labor costs in China, thus the difference compared to China isn't significant anymore. Thus, the core business concept for men and women has been moved to Turkey from China in a combination with proximity to the market (reduced lead time).
- **Costs** - Once assured the supplier meet the quality and capability requirements set by the company, the focus is on price. The different cost images for different product segments affect their choice of production country and location.

- **Cultural challenge** - Communication ability and a competent merge team are also of importance for the company when choosing location for production.
- **Tariffs and tax incentives** – If a country with required level of capabilities and quality is getting free of duty, company E would evaluate it as a potential choice for locating production.
- **CSR** – The suppliers have to be S800 certificated and apply the code of conduct by BSCI to be accepted as a provider to the company. It is of great importance that its suppliers follow the company's guidelines regarding environmental and working conditions.
- **Political, Exchange rate and Demand risk** – These factors is a part of the evaluation but not the most crucial for its decision. Producing products that is commonly used such as underwear reduces the demand risk.

4.5.5.1 Production technologies and country specific capabilities

Company E is always striving to increase flexibility and efficiency in its production and organization. The choice of suppliers is one way to manage this and each country and supplier is picked with regards to their specific knowledge and competence by the company. Company E explains that India possess specific competence within garment buy, to dye individual garment and woven. Furthermore, India is a choice of supply for smaller order quantities. Turkey is mainly chosen for the combination of proximity to the market, short transport time (relatively Asia) and solid textile knowledge combined with affordable cost for production. Thus, the product decides where the supplier is located.

Company E describes themselves, as a rather complicated client for its suppliers, as they need to understand the entire production process by the company regarding quality, quantity and packaging. The company's orders are also smaller in volume and the work effort behind their production is greater compared to companies in the industry, thus puts high demands on their suppliers. Quantity is a major factor when the company chose their supplier and the production facilities. Since the overall production process for the company's products is very complex and different from other apparel companies, the capacity and understanding by the supplier is highly important. A lot of the company's products are produced and delivered in company characteristic packages, both in single and multi-packs in different numbers, which places high demands on understanding the supplier. The company products also requires special machine parks for production, which is one reason combined with quality that company E doesn't produce in Bangladesh anymore. In addition, language is a criterion for cooperation and the company finds it important to learn and better understand different

cultures, which facilitating collaboration. The mentioned factors above consequently limits the number of potential suppliers available for the company. On the other side, since the production process differs significantly from its competing apparel companies, the competition against these for certain suppliers is thus reduced.

4.5.5.2 Quality

Company E is in the upper mid-price segment, thus their customers expect a certain level of quality but are not as price sensitive as those in the low-price segment. Consequently they primarily compete with the product itself, specific regarding quality and fit, therefore all of their suppliers have to meet the required standards. Quality is of great importance and to insure the level is maintained company E constantly sends fabrics and stiches on checks/tests to see that they live up to their requirements. Company E argues that their suppliers in China maintain the same quality standards as those in Europe. There is a wide range of suppliers in China, ranging from very cheap suppliers to suppliers with the highest technology available. This range of suppliers is also present in Turkey. Thus, company E means quality in not country specific, rather supplier specific.

4.5.5.3 Lead time

The recurrent cycle for design, sales, production and distribution of 18 months implies that each specific task has its own deadline. Lead time and proximity to market is of high importance for the company, with the fixed order cycle that they use they know when to order. Company E experience differences in lead time for their different suppliers in Europe and China.

One main contributor is naturally the difference in distance but also the infrastructure and how the factories are constructed. The infrastructure in China is a highly contributing to their choice of suppliers within the country. Today, their suppliers are located along the coastline and in the south of China and the company strategically chooses this. Compared with the inland and north of China, where the infrastructure isn't enough developed, the lead time and cost is often greater in total. The production lead time is more or less the same regardless of country or supplier but the main difference is the time for transportation. For Asia the time for freight with boat is approximately 27 days to Holland and then additional 3-4 days to Gothenburg. For Turkey the transportation time by truck to Holland is 11 days. Company E has recently moved its core segment for men and women to Turkey, due to the proximity to the market and the increased cost for labor in China. The company means that this result in shorter lead time, increased control over the production and shorter trips for staff when controlling production facilities. Company E doesn't work with second complementary orders because the lead time would

be too long (up to 100 days) and generally the demanded volume isn't sufficient.

4.5.5.4 Costs

The cost of producing a certain garment is taken into consideration when evaluating the overall picture of a supplier. Following their choice to involve the suppliers in the design process they are not interested in switching suppliers to achieve the lowest possible price. Long-term relationships and few main suppliers is highly valued by the company to achieve flexibility and lower costs as well as it facilitates regular dialogue, follow-ups and generally a good insight into production conditions. The quality and delivery in relation to price is high and continuous evaluation of the supplier's performance is made.

Company E (see section 4.5.5.3) experience increased labor costs in China and that the cost difference compared with their production facilities in Turkey isn't significant anymore. This has resulted in that the production of its core business concept for both men and women, now is located in Turkey.

Other changes in costs that the company has drawn attention to are the ones for oil and cotton. Company E use characteristic plastic packages, consisting of oil, for the majority of its products in its core business, which have been affected by the increased price for the limited resource. Two years ago the cotton price rose sharply, which affected the entire industry including company E. The 18 months order cycle allows company E to use ocean freight from Asia for their products, thus the transportation cost is only a couple percent of the total cost per garment. The risk for currency fluctuations lies on the distributor, which is Company E for Sweden, Finland, the UK and the online webshop. Significant currency fluctuations that occur for a long period of time may affect the company's supplier selection.

The cost breakdown for the company's production is 30% for production, 12% is duty and freight, 10% is its own expected marginal and the remaining is made up of material.

4.5.5.5 CSR

When selecting suppliers CSR is a factor that company E takes into consideration. They see CSR as a hygiene factor for the textile industry. They are not in the frontline within the industry, but they have ambitions to increase the effort in the future. When selecting suppliers the company requires them to be have a S800 certificate and that they apply the BSCI code of conduct (based on ILO core conventions, UN Children's Convention and UN Declaration of Human Rights). The material leftovers from its production is

used in other production, such as filling material in cushions and special limited editions, to avoid additional environmental damage. The company has an overall goal to reduce carbon emissions from its own operations by 2020, through the implementation of climate measurements and follow-up models. The control of chemical use by its production is of great importance and cluster samplings are done at all the manufacturers every season to ensure proper and correct use.

4.5.6 Sourcing in the future

Company E will source more products from Europe and Bangladesh in the future instead of China. This due to the fact that the cost for production increased drastically in China the past years and will continue to do so, which results in a cost difference compared to Europe that isn't particularly significant anymore. In addition, the younger generation in China is not interested in working in the textile industry in the same extent as before as their options are increasing as a result of the increasing level of education and standard. Thus, company E means that they not will remain in China in 3-5 years. Sourcing more products from Europe (Turkey) is an attempt to reduce lead times especially for transportation and to gain proximity to the market. Depending on type of product and production also Bangladesh is an interesting sourcing option due to the increased level of capability and quality within the textile industry and its favorable cost of production compared to China. In other words, company E will continue to focus on purchasing from suppliers, which are very good at what they do and can deliver products at a high quality to a reasonable cost.

Company E was very interested to move production to Vietnam a few years ago due to that the country was about to be free of duty. Since the proposal finally didn't go through the company thus resigned its plans. However, the company views duty exemption as an attractive factor when a country for production is chosen, which could determine the selection of potential suppliers in the future.

The declining prices and weaker buying power in the market overall, as the case in Holland, affecting the company sorely, thus reorganization of some of the company's businesses have been conducted and may continue to do so in the future if necessary.

According to company E, they continuously evaluate opportunities for their production and logistics. Currently they are looking at the potential of a consolidation of its upstream flows through a central European hub.

5. Analysis

In this chapter, the empirical findings will be analyzed and compared to the theoretical framework from chapter three. It is always challenging to compare reality/empirical findings to theory as reality seldom works strictly according to theoretical models. However, the authors believe our developed model became more applicable to reality when it was expanded with other factors. In addition to the comparison of theory and reality, a major part of this chapter is the comparison between the case companies and what factors they find important when locating offshored production.

5.1 Developed framework

In chapter three, theoretical framework, the development in LCC was portrayed as a factor. As seen in the empirical findings in chapter four, a classification of the development in LCC as a factor was difficult to pursue. Instead it sets the overall trend for the fashion apparel industry and thus more of an overriding factor (figure 32). Therefore, the development in LCC will not be discussed along with the other factors in the developed framework in section 5.3 below, instead it is analyzed in an own section 5.4.

Figure 32: Modified version of the developed framework in section 3.3

5.2 Strategic fit between competitive strategy and supply chain strategy

This section will first analyze each case company, what their competitive and supply chain strategy are and if they are aligned. Following the description of all case companies will be a comparison between the companies to find patterns why the strategies are aligned or not. This section focuses on the key area "Alignment with competitive and supply chain strategy." from the developed framework. Further the findings are used to answer the research question *"How do Swedish fashion apparel companies categorize their products, and are efficient or responsive supply chain strategies established for each category?"*. The findings are also used to analyze the alignment between supply chain strategy and competitive strategy, which is further used in chapter 5.2.

All of the aspects in Fisher's (1997) categorization of a functional and an innovative product are not analyzed for each case company as the data is either confidential and/or difficult for the companies to specify.

5.2.1 Company A

Company A's competitive strategy is to sell products with an innovative design through external independent retailers. This is called a wholesale model where the major part of the produced volume is already sold to the retailers and purchased to order (PTO). Recently they have complemented their wholesale business with a number of company-owned stores and web-shop. The wholesale model shifts the demand risk towards the distributors and retailers and thus eliminates large parts of the demand uncertainty (Cole, 2014). It's difficult to predict how much the agents will purchase and sell or how much distributors will purchase, however as the volume is produced according to orders the demand can be considered as predictable. The company-owned stores and webshop gives company A more control and higher margins, however they bear the risk of keeping stock. The outlet-stores are used to sell previous collections and sample collections, which can be seen as a way of mitigating risk.

5.2.1.1 Product characteristics

Company A divides their products into three different groups: basic, season and trend. According to the company all of the products are sourced in the same way and with the same supply chain, aside from the production lead time which differs depending on the products complexity. However there is a difference between sourcing products sold through the wholesale model and products sold in the company owned stores and webshop. Thus all of company A's product groups, both for wholesale and own retail, will be compared to Fisher's (1997) definition of basic and innovative products (table 10).

As described earlier the demand uncertainty for the wholesale model is considered to be low, compared to the own retail where the uncertainty differs among the product groups. The demand uncertainty for all product groups sold through the wholesale model is similar to Fisher's (1997) definition of a functional product. Basic products sold through the own retail are considered to have low demand uncertainty, thus these products are often recurrent among collections and company A has therefore improved the forecast accuracy. As the products become more seasonal and complex the demand uncertainty increases.

Regardless of distribution channel all products have a product life cycle of approximately 3 months which is similar to an innovative product.

The margin for products sold through the own retail is higher, but the relationship between the groups are the same regardless of channel. As described in section 4.1.3 (product mix and planning cycle) the basic products are the ones company A makes the biggest profit on. When seasonality and complexity increases the margin decreases, however as company A stressed several times during the interview these products are highly important for marketing of the brand. Company A thus argues their basic/functional products have higher margins than the seasonal/innovative products. This reasoning differs completely from Fisher's (1997) theory.

The inventory costs for the products sold through wholesale are low as company A doesn't keep them in stock. For the products sold in the own retail the basic products are considered to have the lowest inventory costs per product, however as a total these products have the highest cost thus they are sold in the largest volumes. With increasing seasonality and complexity the cost per product increases and the volumes decreases. Thus the basic products are more similar to the definition of a functional product regarding both inventory cost and volume per SKU. The more seasonal and complex products are similar to an innovative product on both characteristics.

The production cycle is approximately 1 year regardless of product group or distribution channel, thus all product groups are comparable to a functional product concerning this characteristics.

Based on this comparison it's difficult to clearly classify the different product groups as functional or innovative, thus none of the groups only match the characteristics of a functional or innovative product. However the comparison indicates that the basic products are principally similar to a functional product, and as seasonality and complexity increases the products tend to become somewhat more similar to an innovative product. Overall the product groups sold through the wholesale model are more functional than the same product groups sold through own retail.

Table 10: Comparing Company A's products categories to Fisher's (1997) definition of functional and innovative products

	Functional (Predictable demand)	**Innovative** (Unpredictable demand)	**Basic**		**Season**		**Trend**	
			Wholesale	**Own retail**	**Wholesale**	**Own retail**	**Wholesale**	**Own retail**
Demand uncertainty	low	high	low	low	low	low/medium	low	medium/high
Product life cycle	more than 2 years	3 months to 1 year	12 months	12 months	3 months	3 months	3 months	3 months
Contribution margin	5% to 20%	20% to 60%	high	high	medium	medium	low	low
Inventory cost	low	high	low	high	low	high	low	medium
Average stockout rate	1% to 2%	10% to 40%	PTO	NA	PTO	NA	PTO	NA
Stockout cost	low	high	PTO	NA	PTO	NA	PTO	NA
Volume per SKU	high	low	high	high	medium/high	medium/high	low	low
Average forced end-of-season markdown as percentage of price	0%	10% to 25%	PTO	-	PTO	-	PTO	-
Lead time	long	short	Production cycle of 1 year	Production cycle of 1 year	Production cycle of 1 year	Production cycle of 1 year	Production cycle of 1 year	Production cycle of 1 year
Obsolence	low	high	PTO	NA	PTO	NA	PTO	NA

5.2.1.2 Supply chain strategy

Based on the interview with company A it was difficult to determine if they had an explicit supply chain strategy. Instead the collected data was compared to the definition of a physically efficient supply chain, a market responsive supply chain, and an outcome-driven supply chain (Fisher, 1997; Lee, 2002; Melnyk *et al*., 2010).

From the interview it was extracted that company A wanted to deliver high quality products to their customer at a predetermined date which was agreed upon when placing the order. They also wanted to maintain a high level of CSR initiatives. Comparing these primary purposes with the ones of the physically efficient and market responsive supply chain it is evident that their supply chain cannot be classified as either of them (table 11). Instead the purpose of their supply chain can be compared with the one of an outcome-driven supply chain. A supply chain which competes with focusing on a number of factors and specializing in one or a number of them. When conducting this comparison it risks being vague, as every undefined supply chain strategy could be classified as outcome-driven in their own way in an attempt to portrait a supply chain strategy.

Regarding the manufacturing focus of company A’s supply chain it most compatible with the physically efficient strategy. Based on the fact that

production capacity is allocated far in advance, and no excess capacity is used from any supplier to increase flexibility.

The inventory strategy of company A is difficult to compare to either of the supply chains as they don't keep stock of finished goods. Neither do they keep stock of parts as their production is offshored.

The lead time focus is limited for company A, which can be compared to the lack of effort from the physically efficient supply chain to reduce lead time. When company A selects suppliers they primarily take, capabilities, quality, CSR and costs into consideration. Comparing these factors with the efficient and responsive they are most compatible with the physically efficient supply chain.

The final comparison is the product-design strategy where company A is best matched with the physically efficient supply chain. Thus company A want's to maximize quality and fit of their products while taking costs into consideration when offshoring production.

The overall comparison of company A's supply chain and the theory regarding different types of supply chains shows that they don't have a clear established supply chain strategy. However, it is most comparable to a physically efficient strategy. The previous annual report showed they had a negative EBIT of 24 MSEK partially following a number of strategic changes, which can be a result of a lacking clear strategy. These changes have focused on both ends of the supply chain: they have created a new strategy for their collections, and a new distribution strategy where they will control more sales in-house rather than using agents. In addition they have also focused on improving the organization to achieve the desired goals: stop the drop in orders, increase sales, and strengthen the brand. These significant changes indicate that they are working on improving their supply chain.

Table 11: Comparison of company A's supply chain with theory (Fisher, 1997; Lee, 2003; Melnyk et al., 2010)

	Physically efficient	Market responsive	Outcome-driven	Company A
Primary purpose	Supply predictable demand efficiently at the lowest possible cost	Respond quickly to unpredictable demand in order to minimize stockouts, forced markdown, and obsolete inventory	Strategically coupled and value driven, it should be designed and managed to deliver specified outcomes	All customers shall receive high quality products at a predetermined date
Manufacturing focus	Maintain high average utilization rate	Deploy excess buffer capacity and/or use make-to-order	-	Allocate production capacity far in advance and produce products which have been ordered
Inventory strategy	Generate high turns and minimize inventory throughout the chain	Deploy significant buffer stock of parts or finished goods for the residual uncertainty	-	The wholsesale model allows company A to minimize their inventory levels by producing according to order. Inventory is however kept for the own retail
Lead time focus	Shorten lead-time as long as it doesn't increase cost	Invest aggressively in ways to reduce lead-time	-	Few efforts to reduce leadtime. The wholsesale model allows company A to have a product cycle of 1 year
Approach to chosing suppliers	Select primarily for cost and quality	Select primarily for speed, flexibility, and quality	-	Select for capabilities, quality, cost and relationship
Product-design strategy	Maximize performance and minimize cost	Use modular design in order to postpone product differentiation for as long as possible	-	Products are designed in collaboration with suppliers, and produced to maximize quality and fit as well as taking costs into consideration

5.2.1.3 Alignment

Chopra and Meindl's (2004) and Fisher's (1997) theory regarding strategic alignment/fit is mainly based on two key areas: understanding the customer uncertainty and understanding the supply chain capabilities. The appropriate level of responsiveness or efficiency should be chosen to fit the competitive strategy. As company A's wholesale model produces products according to orders and shifts the demand uncertainty to the distributors and retailers company A doesn't experience a high level of uncertainty. This would imply a physically efficient supply chain. However, from the comparison in section 5.1.1.2 it wasn't clear they had a strictly efficient supply chain. The fact that they also had different types of products, some more functional and others more innovative, would imply that different parts of their supply chain be more efficient and others more responsive (Fisher, 1997).

When placing company A's product groups in Fisher's (1997) matrix all groups are placed in the same vertical position, as they apply the same supply chain for them (figure 33). The product groups are classified as functional or innovative based on the comparison in section 5.1.1.1. According to the matrix, the misalignment increases further up in company A's product mix.

Chopra and Meindl's (2004) thoughts that a competitive strategy and supply chain strategy are aligned when the capabilities of the supply chain meet the demand uncertainty is tested in this case. Despite lacking an explicit supply chain strategy, 2013 was the first year company A made a loss. The four years prior the company made a profit, however it has decreased each year. Their competitive strategy, being primarily competing with the innovative design of their products and selling them using a wholesale model that transfers the risk to the distributors and retailer, allows them to use a relatively cost efficient supply chain. However depending on the growth of the new channels, own retail and webshop, the need for a more responsive supply chain is likely to increase in order to manage the increase in demand uncertainty.

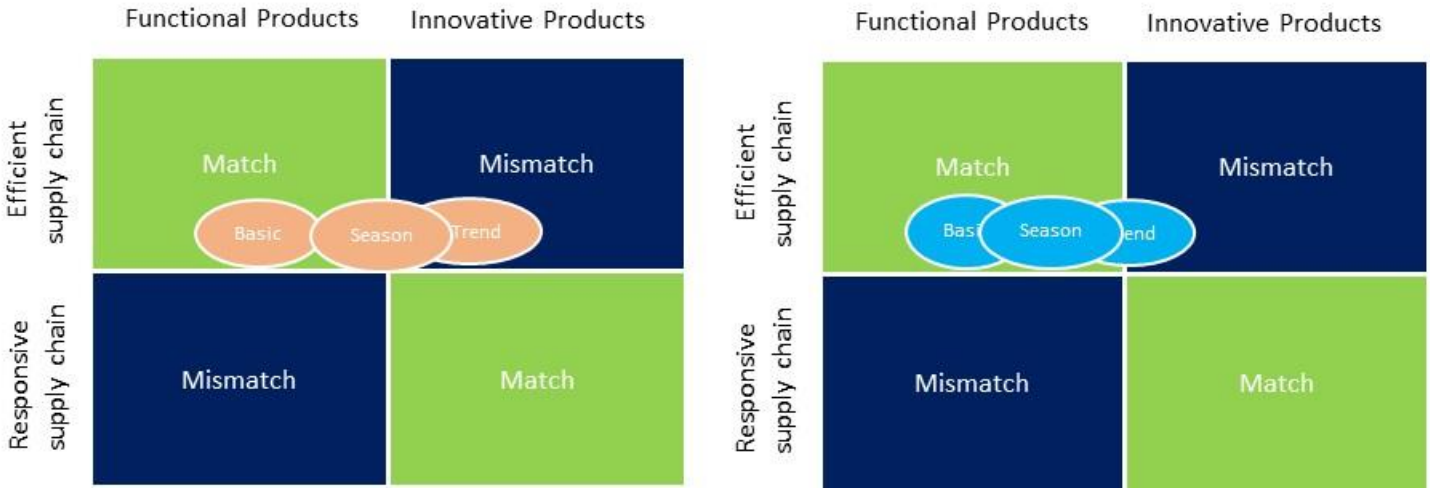


Figure 33: Analyzing the strategic alignment between company A's products and supply chain according to Fisher's (1997) matrix. To the left: Own retail. To the right: Wholesale

5.2.2 Company B

Company B competes on the upper-mid price segment with the fashion and fit of their products. High CSR awareness permeates the company and their suppliers. Company B's total revenue is distributed equally between a wholesale business model, where products are produced according to orders, and their own retail. Thus, company B handles half of the risk and the other half is shifted towards the distributors (Cole, 2014). Included in the own retail are company B's factory outlets, which are used to sell previous collections at a reduced price. The previous five years company B has steadily increased their revenue, and each year made a profit.

5.2.2.1 Product characteristics

Company B divides their products into two groups: carry overs and main. The main difference is that the carry overs are products which have been included in previous collections, and the main products are the ones which the new

collection are made up of. In addition they have the capsule collection, which is an extra smaller collection which ends the main collection and is considered to be an extra "spice". The characteristics of these product groups were compared to Fisher's (1997) theory (table 12).

As all the products sold through the wholesale model are produced according to placed orders, the demand uncertainty for all those products are low and thus similar to a functional product. However for the remaining volume, sold through their own retail, the demand uncertainty differs between the product groups. The carry over and main products are purchased according to forecasts based on historical sales and predictions. As the carry over products are recurrent the accuracy of the forecasts are higher than for the main products. Following the description in section 4.2.2 company B has historically experienced both lost sales and mark-downs, despite their own thoughts that the demand uncertainty is rather constant and steady. The capsule products are used as a "spice" at the end of each collection, however as they are a part of the same collection as the main products the demand uncertainty is the same. Following this description the carry over products are more similar to Fisher's (1997) definition of functional products, and the main and capsule products are more similar to innovative products.

Comparing the product life cycle of company B's products with the theory shows the same pattern. The carry over products have a longer life cycle similar to the functional products, thus they are recurrent, and the main products have shorter. The capsule products have an even shorter life cycle as they are sold at the end of each collection. Regardless if the products are sold through wholesale or own retail the product life cycle is the same.

According to company B their carry overs, which generally are less expensive, have a higher margin than the more expensive products thus the margin decreases with the sales price. During the interview, the company stated that their most expensive products "should" actually be sold a higher price based on quality and material, but it would be too expensive for their brand and the customers would instead choose brands in higher price-segments. Thus, when comparing the contribution margin the carry over products are more similar to an innovative product and the main and capsule collections are somewhere in between the functional and innovative products.

Coupled to the price of the product is the inventory cost, as the carry over products are less expensive per product they are cheaper to keep in stock. This implies they are more similar to the functional products, and the main products are more similar to innovative products. The capsule products are also more similar to the definition of an innovative product. However the

products sold through wholesale are considered to have low/or no inventory cost thus company B doesn't keep them in stock.

As the carry over products are recurrent in different collections the volume of these products are higher than for a main product that is only found in one collection. The capsule product is also only found in one collection. This implies the carry over products are similar to the definition of a functional product.

Both carry over, main and capsule products have a production cycle of 1 year, from design to store. The time from placed order at the supplier to delivery is between 16 and 24 weeks. Overall the products sold through wholesale are more functional and the same product sold through own retail are slightly more innovative. Carry over products are more similar to Fisher's (1997) definition of a functional product and the main and capsule products more similar to an innovative product.

Table 12: Comparing company B's products categories to Fisher's (1997) definition of functional and innovative products

	Functional (Predictable demand)	**Innovative** (Unpredictable demand)	**Carry overs**		**Main**		**Capsule**	
			Wholesale	**Own retail**	**Wholesale**	**Own retail**	**Wholesale**	**Own retail**
Demand uncertainty	low	high	Low	low	Low	medium	Low	medium
Product life cycle	more than 2 years	3 months to 1 year	6-12 months	6-12 months	2-3 months	2-3 months	1 month	1 month
Contribution margin	5% to 20%	20% to 60%	high	high	medium/high	medium/high	medium	medium
Inventory cost	low	high	low	low	low	medium/high	low	medium/high
Average stockout rate	1% to 2%	10% to 40%	PTO	NA	PTO	NA	PTO	NA
Stockout cost	low	high	PTO	NA	PTO	NA	PTO	NA
Volume per SKU	high	low	high	high	medium/high	medium/high	low	low
Average forced end-of-season markdown as percentage of price	0%	10% to 25%	PTO	NA	PTO	NA	PTO	NA
Lead time	long	short	Forecast demand 1 year in advance	Forecast demand 1 year in advance	Production cycle of 1 year	Production cycle of 1 year	Production cycle of 1 year	Production cycle of 1 year
Obsolence	low	high	low	NA	low	NA	low	NA

5.2.2.2 Supply chain strategy

During the interview with company B we found it difficult to pin-point their exact supply chain strategy, despite the fact that 17 employees worked within the logistics department. Thus their supply chain was compared to the theory regarding an efficient, a market responsive and an outcome-driven supply chain (Fisher, 1997; Lee 2002; Melnyk *et al*., 2010).

The authors experienced that the primary purpose of company B's supply chain was to deliver high fashion products while maintaining a high level of CSR. This can be compared to the outcome-driven supply chain which focuses on a number of factors, where quality and sustainability (CSR) are two of the factors (table 13).

Regarding the manufacturing focus of company B's supply chain they use a make-to-order strategy for half of their production volume. As described earlier they won't compromise on quality for cost, thus they don't have the same cost focus as an efficient supply chain. However, the production cycle starts 1 year in advance which indicates on a supply chain more similar to the cost-efficient rather than the market responsive that focuses on excess capacity to increase flexibility.

The inventory strategy of company B is difficult to compare to the given theory, thus their strategy today is mostly based on estimations and feeling and has therefore resulted in lost sales and mark-downs the previous years.

The lead time focus of company B is more similar to the efficient supply chain as they don't invest in reducing lead time. Slightly contradictory is the fact that 55 % of their outsourced and offshored production is located in Europe, however this is not in an attempt to reduce lead times.

Company B primarily selects suppliers based on their ability to produce a high quality product with the right fit while maintaining a high level of CSR. These selections criteria are not similar to the market responsive, as it focuses on speed and flexibility. However it is neither similar to the efficient supply chain as it focuses on cost. The quality factor is found in both, however CSR is more likely to be coupled to the outcome-driven supply chain discussed earlier.

The product-design strategy of company A is similar to the one of an efficient supply chain, except the fact that the efficient supply chain tries to minimize cost, which company B does not do as it risks compromising quality.

Table 13: Comparison of company B's supply chain with theory (Fisher, 1997; Lee, 2003; Melnyk et al., 2010)

	Physically efficient	Market responsive	Outcome-driven	Company B
Primary purpose	Supply predictable demand efficiently at the lowest possible cost	Respond quickly to unpredictable demand in order to minimize stockouts, forced markdown, and obsolete inventory	Strategically coupled and value driven, it should be designed and managed to deliver specified outcomes	Deliver high quality fashion products to customers while maintaining a high level of CSR initiatives
Manufacturing focus	Maintain high average utilization rate	Deploy excess buffer capacity and/or use make-to-order	-	Allocate production capacity far in advance. The entire volume for wholesale (make-to-order) and own retail are manufactured simiuntainosly
Inventory strategy	Generate high turns and minimize inventory throughout the chain	Deploy significant buffer stock of parts or finished goods for the residual uncertainty	-	Half of their volume is sold through wholesale, thus not stocked buy the company. Company B has found it difficult to forecast volumes for their own retail, which has resulted in inventory fluctuations
Lead time focus	Shorten lead-time as long as it doesn't increase cost	Invest aggressively in ways to reduce lead-time	-	The majority of their products have long lead-times due to their 1 year production cycle. Company B does not focus on reducing lead-times
Approach to chosing suppliers	Select primarily for cost and quality	Select primarily for speed, flexibility, and quality	-	Select for capabilities, quality and CSR
Product-design strategy	Maximize performance and minimize cost	Use modular design in order to postpone product differentiation for as long as possible	-	Products are designed in collaboration with suppliers, and produced to maximize quality and fit aswell as taking costs into consideration. However quality will not be compromised in efforts to reduce costs

5.2.2.3 Alignment

When analysing if company B's competitive and supply chain strategy are aligned it is important that the capabilities of the supply chain support the competitive strategy. Company B's competitive strategy is to sell high quality fashion clothes with good fit. The products are sold both through wholesale and their own retail. An efficient supply chain is advantageously used for the low uncertainty of the wholesale model. The volume sold in the own retail consists of both functional and innovative products based on the analysis in section 5.1.2.1. These products should, according to Fisher (1997) be sourced through two different supply chains. Where one is more responsive to meet the uncertainty in demand for the main products.

When placing company B's products in Fisher's (1997) matrix the product groups are positioned slightly different vertically (figure 34). The carry over products has a more steady flow with forecasts 1 year in advance, and the main products production cycle is 1 year from design to store where 16-24 weeks is the lead time from the order is placed until it is available in stores.

The capabilities of the supply chain are aligned to deliver a high quality fashion product while maintaining a high level of CSR, however the supply chain is not fit to cope with the uncertainty in demand for the main products sold through their own retail.

The combination of wholesale and own retail makes it difficult for company B to establish one supply chain which works well for both concepts. As the supply chain today serves the low risk/uncertainty wholesale business well but has problems with lost sales and markdowns in the own retail. This problem could also be traced back to the fact that the own retail has been a growth strategy for company B the previous years. In 2011 the company increased the number of store by 20% to 45 stores. The decreased profit since 2011 can possibly be linked to the increased number of stores and lack of supply chain strategy that both works with wholesale and own retail.

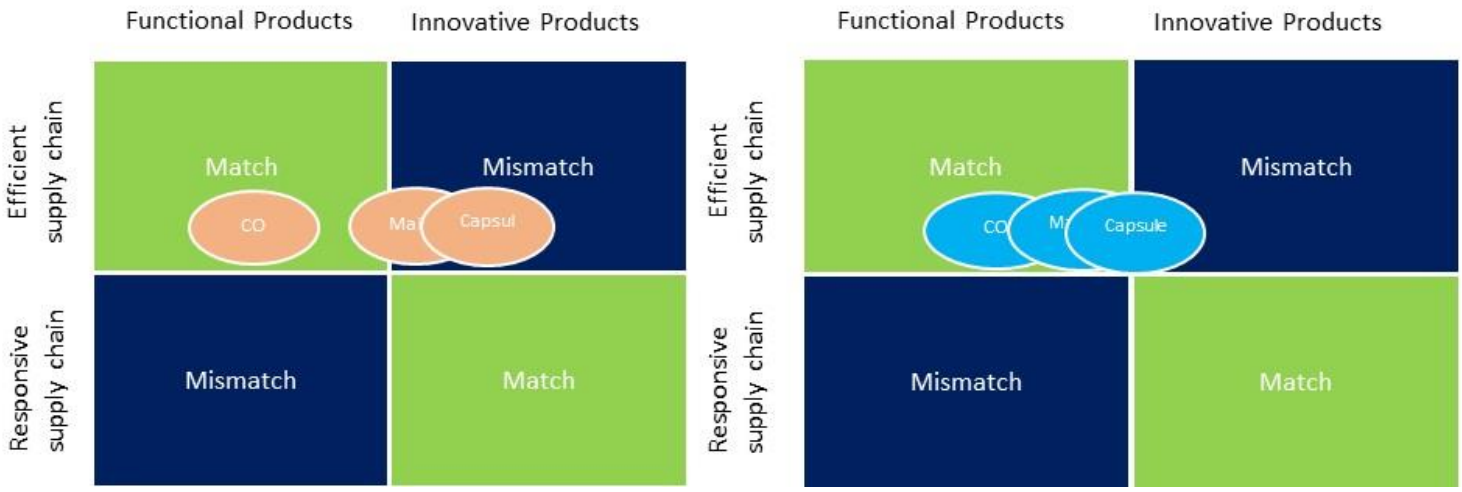


Figure 34: Analyzing the strategic alignment between company B's products and supply chain according to Fisher's (1997) matrix. To the left: Own retail. To the right: Wholesale

5.2.3 Company C

Company C's competitive strategy is to offer their customers a broad assortment of products (44000 SKUs), which apparel products are a part of. The broad assortment is motivated by a large number of basic products that are complemented with products the customers can buy to "treat" themselves. The products are sold through the company's 120 stores and thus they take the entire risk in the supply chain. In addition to the company stores products are sold through their webshop.

5.2.3.1 Product categories

Company C divides their apparel products into two groups: basic and seasonal. Basic products are products which are active all year (e.g. socks,

and underwear), seasonal products are the ones included in the four different collections. These two collections were compared to Fisher's (1997) theory of functional and innovative products (table 14).

As company C only has own retail all products are purchased according to forecasts and predictions. The demand uncertainty for basic products are lower than seasonal products since they are the same all year and thus easier to forecast. Company C's basic products are thus similar to the definition of functional products and the seasonal products are similar to the definition of innovative products.

Following the discussion of the basic products being active all year they are considered to have a long product life cycle similar to the definition of a functional product. The four collections per year consists of the seasonal products, thus the product life cycle is approximately 3 months. This life cycle is similar to the definition of an innovative product.

As described earlier the basic products are for example socks and underwear and seasonal clothes for example dresses and winter jackets. The basic products are thus cheaper to produce and therefore account for a lower inventory cost per product than the seasonal products. Following this discussion the basic product can be considered to be functional regarding the inventory cost and the seasonal products are more similar to the definition of an innovative product.

Based on the interview with company C it was evident they have historically experienced both lost sales and mark-downs. This has particularly concerned the seasonal products. Without specifying a number of mark-downs the seasonal product have a higher stockout rate and thus more similar to the definition of an innovative product.

Regarding the volume per SKU the basic products are more similar to the definition of a functional product since they are active all year and consequently sold in larger volumes. Compared to the seasonal product, which are sold during three months.

Production planning starts 14 months in advance for both product groups. First orders from Asian suppliers are placed 9 months in advance and first orders from European suppliers are placed 5-6 months in advance. Re-orders from European suppliers are placed on significantly shorter notice.
The level of obsolescence is coupled with the previous discussions regarding difficulties to forecast the demand for seasonal products and with the short product life cycle of approximately 3 months. Consequently the level of

obsolescence is higher for the seasonal products than the basic products, thus the seasonal products are comparable to the definition of an innovative product.

Based on the previous comparison company C's basic products are similar to the definition of a functional product, on all characteristics that data has been acquired. On the other hand the seasonal product are similar to the definition of an innovative product on all aspects accept the lead time. However as re-orders are placed with shorter lead time from Europe these products can be considered to be similar to the theory in this aspect also.

Table 14: Comparing company C's products categories to Fisher's (1997) definition of functional and innovative products

	Functional (Predictable demand)	**Innovative** (Unpredictable demand)	**Basic**	**Seasonal**
Demand uncertainty	low	high	low	high
Product life cycle	more than 2 years	3 months to 1 year	>12 months	3 months
Contribution margin	5% to 20%	20% to 60%	NA	NA
Inventory cost	low	high	low	high
Average stockout rate	1% to 2%	10% to 40%	low	high (the company has historically experienced lost sales)
Stockout cost	low	high	NA	NA
Volume per SKU	high	low	high	medium
Average forced end-of-season markdown as percentage of price	0%	10% to 25%	NA	NA
Leadtime	long	short	Production planning starts 14 months in advance. Orders placed 9 months in advance	Production planning starts 14 months in advance. Orders placed 9 months in advance from Asia and 5-6 months in advance from Europé. Second orders for these products are placed from European suppliers in reduce lea-time
Obsolence	low	high	low	Medium/high (the company has historically been forced to mark-down products)

5.2.3.2 Supply chain strategy

As described in chapter 4.3.3 company C has divided their supply chain into two different flows: one with a faster product flow that focuses on flexibility and speed, and one with a slower product flow focusing on being cost efficient. Thus they have two outspoken strategies. The data collected from the interview was compared to Fisher's (1997) definition of a physically efficient supply chain and a market responsive supply chain (table 15).

Comparing the primary purpose of company C's supply chain it is evident that their supply chain is divided into two. The slower cost efficient part has the same primary purpose of the physically efficient supply chain. The other faster and more flexible part has the same purpose of the market responsive supply chain, primarily focusing on reducing mark-downs and lost sales.

Company C allocates production to selected suppliers primarily based on their capabilities. The slower cost efficient supply chain is also very conscious of the manufacturing cost. When placing second orders, through the faster supply chain, from European suppliers the company isn't as conscious of the manufacturing cost. Thus the higher cost is motivated by the reduced amount of marked-down products and less lost sales. Consequently the margin per product is lower however the entire margin for the collection is higher.

It is difficult to compare company C's inventory strategy to Fisher's (1997) theory thus that is one of their main problems today. Primarily based on the lack of product management and forecast accuracy. It wasn't clear if they had an explicit strategy in place for their inventory.

As described in chapter 4.3.2 company C aims to place all first orders from Asian suppliers mainly from a cost perspective, except the European suppliers that are also used for first orders based on their capabilities. These first orders are transported by sea to reduce costs. Following this description the slower cost efficient part of company C's supply chain is similar to the definition of a physically efficient supply chain. The other part is similar to the definition of a market responsive supply chain. The choice to place second orders from European suppliers in an attempt to reduce lead times is comparable to the theory that suggests to invest aggressively to reduce lead times.

Company C selects suppliers based on a product dimension and a cost dimension, see chapter 4.3.3. The Asian suppliers are primarily selected for their capabilities and cost. The European suppliers are primarily selected for their capabilities, speed and flexibility. Thus is company C's supply chain

comparable to both the definition of the physically efficient and market responsive supply chain. This is a sign that the company has splinter the supply chain, and manages the products differently.

When designing products, company C focuses on the quality of the product while taking costs into consideration. The design is done far in advance. This is mainly for the first orders from Asia. When placing second orders from Europe the suppliers know what products they will eventually need to produce and thus have fabrics and capacity available to quickly produce. Similar to the previous strategies company C's supply chain is comparable to both the physically efficient and market responsive regarding the product-design strategy.

The previous six comparisons confirms that company C's supply is divided into two flows, where one is physically efficient and one is market responsive.

Table 15: Comparison of company C's supply chain with theory (Fisher 1997; Lee 2003; Melnyk et al. 2010)

	Physically efficient	**Market responsive**	**Outcome-driven**	**Company C**
Primary purpose	Supply predictable demand efficiently at the lowest possible cost	Respond quickly to unpredictable demand in order to minimize stockouts, forced markdown, and obsolete inventory	Strategically coupled and value driven, it should be designed and managed to deliver specified outcomes	Focuses on two dimensions: a product dimension so the sourced product has the right specifications, and a costdimension. The supply chain is divided into two flows: one slower more cost focused, and one faster and flexible
Manufacturing focus	Maintain high average utilization rate	Deploy excess buffer capacity and/or use make-to-order	-	Primarily allocate production to suppliers based on their capabilities. First orders with long product planning from Asia and re-orders from Europé for shorter lead time
Inventory strategy	Generate high turns and minimize inventory throughout the chain	Deploy significant buffer stock of parts or finished goods for the residual uncertainty	-	Lack of product management and accurate demand forecasts has resulted in mark-downs and lost sales
Lead time focus	Shorten lead-time as long as it doesn't increase cost	Invest aggressively in ways to reduce lead-time	-	Orders are placed 9 months in advance from Asian suppliers and 5-6 months in advance from European suppliers. Further European suppliers are used for second orders to increase flexibility and react to market demand
Approach to chosing suppliers	Select primarily for cost and quality	Select primarily for speed, flexibility, and quality	-	Select for capabilities, quality, CSR and costs. European suppliers are also selcted for speed
Product-design strategy	Maximize performance and minimize cost	Use modular design in order to postpone product differentiation for as long as possible	-	Products sourced from Asian suppliers are designed and planned far in advance. Design for products sourced from European suppliers is delayed to react to the market demand

5.2.3.3 Alignment

When analysing if company C's competitive and supply chain strategy are aligned it is important that the capabilities of the supply chain support the competitive strategy Chopra and Meindl (2004). They want to offer their customers a large number of products at a reasonable price. They offer a broad assortment of basic products and also seasonal clothing which the customer can treat themselves to. From the analysis in chapter 5.1.3.1 it was stated that the basic product group was similar to the definition of a functional product and the seasonal product group was similar to the innovative product. There is a clear alignment between the cost efficient supply chain used for sourcing the basic product and the strategy to always offer the customer these products at a reasonable price, such as socks and underwear. Further the more innovative seasonal products are initially sourced through the cost efficient supply chain, which is considered to be misaligned mainly because of the uncertainty in demand that the cost efficient supply chain can't manage. However, company C is compensating with having a second more flexible and faster flow from Europe to manage the uncertainty in demand. This second flow and the innovative products are aligned.

During the interview with company C it was stated that the company isn't achieving the desired goals regarding profit. They are thus implementing a series of changes including a more accurate forecasting system and increased sourcing from Europe as the cost difference between Asia and Europe is decreasing. The combination of the two supply chains is theoretically a good approach to: offering basic products all year, reducing lost-sales and reducing mark-downs. Company C's supply chain is comparable to the description of Zara's supply chain in chapter 1.4.2. Except the fact that company C uses a physically efficient strategy for the first orders of their seasonal products.

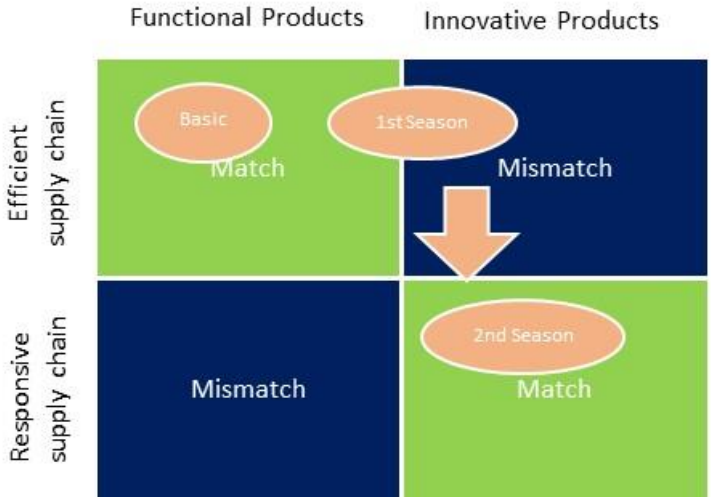


Figure 35: Analyzing the strategic alignment between company C's products and supply chain according to Fisher's (1997) matrix.

5.2.4 Company D

Company D's competitive strategy is to sell high quality fashion product with innovative design through their own retail stores. This is called a retail business model where the entire volume produced is based on speculation and historical data. The company doesn't sell any of its products online. The retail business model implies that the company takes the entire financial and inventory risk themselves as well as dealing with demand uncertainty. However the model gives company D total control and higher margin in comparison with the wholesale model.

5.2.4.1 Product characteristics

Company D divides their products into three different categories: NOOS, season and trend products. NOOS and first orders of seasonal products are sourced in the same way and with the same supply chain from Asia. The second complementary orders and trend products are sourced with shorter lead time and increased flexibility from Europe. The different categories will be compared to Fisher's (1997) definition of basic and innovative products displayed in table 16 below.

As mentioned earlier the demand uncertainty for the retail model is considered to be high for seasonal and trend products due to difficulties in speculations. The demand uncertainty for seasonal (especially re-orders) and trend products are therefore similar to Fisher's (1997) definition of an innovative product. The demand uncertainty for the NOOS concept on the other hand is low, due to products often are recurrent among collections and thus forecasts are more accurate. Thus, NOOS products are similar to Fisher's (1997) definition of a functional product. As the products become more seasonal and trendier the complexity of the demand uncertainty increases.

The products in trend and re-orders of seasonal products have a product life cycle of approximately 3 months or less which is similar to an innovative product. The products in NOOS and first orders of seasonal products on the other hand has a product life cycle of 12 months which is comparable to a functional product.

The margin for products sold in the retail model used by the company is higher compared to a wholesale model, due to less middlemen. The NOOS concept are the products where the company makes their biggest profit and for season and trend products complexity increases and margin decreases. However the margin for re-orders of seasonal products and trend is less as a beginning due to additional expenses for production in Europe but the end margin higher because of more sales at an ordinary price and thus less markdowns.

The inventory costs are high for the seasonal and trendier products as company D has to keep them in stock themselves. The NOOS products has the lowest inventory cost per product, however as a total these products have the highest cost due to the large volumes produced and sold. With increasing complexity and seasonality the cost per product increases and the volumes decreases. Thus the NOOS products, produced in large volumes, are more similar to Fisher's (1997) definition of a functional product regarding both inventory cost and volume per SKU. Seasonal and trendier products generally produced in smaller order volume and with higher complexity have more similarities to an innovative product on both characteristics.

The production cycle is approximately 1 year for NOOS and first order of seasonal products, thus these two product groups are comparable to a functional product concerning this characteristics. The production cycle for trend products and re-orders of seasonal fashion apparel is approximately 8 weeks, thus the characteristics of the product groups are similar to an innovative product.

Based on this comparison it's difficult to unambiguously classify the three different product categories as functional or innovative, thus none of the categories only matches the characteristics of a functional or an innovative product. Comparison although indicate that the NOOS concept are mainly similar to a functional product. Seasonal products, which are more complex than NOOS, tend to become somewhat more similar to an innovative product than a functional. The re-orders of seasonal product and especially trend products displays most similarities to an innovative product.

Table 16: Comparing Company D's three product categories to Fisher's (1997) definition of functional and innovative products

	Functional (Predictable demand)	**Innovative** (Unpredictable demand)	**NOOS**	**Seasonal**	**Trend**
Demand uncertainty	low	high	low	high	high
Product life cycle	more than 2 years	3 months to 1 year	12 months	3 months	< 3 months
Contribution margin	5% to 20%	20% to 60%	low	medium/high	high
Inventory cost	low	high	low	medium/high	medium/high
Average stockout rate	1% to 2%	10% to 40%	low	medium	medium
Stockout cost	low	high	high	medium	medium
Volume per SKU	high	low	high	medium	medium
Average forced end-of-season markdown as percentage of price	0%	10% to 25%	NA	NA	NA
Lead time	long	short	Production planning starts 12 months in advance. Orders placed 9 months in advance	Production planning starts 12 months in advance. Orders placed 9 months in advance	Orders placed 8 weeks in advance from Europé
Obolence	low	high	low	medium/high	high

5.2.4.2 Supply chain strategy

In the interview with company D we found two main principles/flows for their supply chain, one slower more cost focused and one faster. NOOS and first orders of seasonal products are designed and planned far in advance, thus the company mainly source these product categories from Asia. Trend products and second complementary orders of seasonal products have a shorter design and planning process, consequently these products are sourced from Europe due to proximity to the market and reduction of transportation lead time. Company D's supply chain was compared to the theory regarding a physically efficient, a market responsive and an outcome-driven supply chain (Fisher, 1997; Lee, 2002; Melnyk *et al*., 2010).

The authors found that the primary purpose of the company's supply chain was to deliver innovative and high quality fashion apparel to customers while maintaining a high level of CSR initiatives and mitigating risk. Comparing the primary purpose with the three supply chain strategies, it was clear that their supply chain couldn't be classified as neither the physically efficient nor the market responsive (table 17). However the comparison with the company

purpose and the outcome-driven were more alike regarding focus on a number of factors such as CSR, quality and innovation (section 3.1.4.3).

Regarding the manufacturing focus of company D's supply chain they use a retail business model and thus the entire order volume is based on speculations. The company uses two production principles for their garments, either sourcing from Asia or Europe, as mentioned earlier. As the demand for NOOS products are more predictable and focus on reducing cost, thus sourced from Asia. The company allocate production capacity far in advance, which increase the possibility to negotiate production volume demanded at a good price, thus able to keep costs down for these products. The supply chain for NOOS is comparable to the physically efficient strategy. On the other hand, the manufacturing focus for trend and re-orders of seasonal products, were fabrics and capacity are allocated at their European suppliers and thus used as excess capacity, are more comparable with the market responsive strategy.

The inventory strategy is although more difficult to compare to the given theory, as the company for some categories (e.g. NOOS) have to keep stock of finished goods. However, trend products with smaller production volumes and short planning to delivery cycle and re-orders, are more or less directly distributed to their retail stores, to quickly respond to market trends, thus reducing amount of inventory.

The lead time focus of company D is similar to both of the theoretical supply chain strategies depending on the company's two ways of sourcing. For NOOS and first orders they don't invest in reducing lead time as these products are planned and forecasted far in advance, 12 months, thus similar to the physically efficient strategy. However, for trend products and re-orders the lead time focus is of high importance to quickly react to market trends and refill popular items in their stores, thus comparable with the market responsive strategy.

Company D primarily selects suppliers based on their capability to produce high quality products at a reasonable price while mitigating the risk and maintaining a high level of CSR. In addition, suppliers for trend products and re-orders are also selected for speed and flexibility. These criteria are for NOOS and first orders comparable with the efficient supply chain due to more of a cost focus and for trend and re-orders, as they focus on speed and flexibility, thus similar to the responsive strategy.

The product-design strategy of company D best matches the physically efficient supply chain, as they want to maximize quality of their products at the same time as taking costs into account.

Table 17: comparison of company D's supply chain with theory (Fisher, 1997; Lee, 2003; Melnyk et al., 2010)

	Physically efficient	Market responsive	Outcome-driven	Company D
Primary purpose	Supply predictable demand efficiently at the lowest possible cost	Respond quickly to unpredictable demand in order to minimize stockouts, forced markdown, and obsolete inventory	Strategically coupled and value driven, it should be designed and managed to deliver specified outcomes	Deliver high quality fashion products to customers while maintaining a high level of CSR initiatives and mitgating risk. The supply chain is divided into two flows: one slower and more cost focused, and one faster market responsive
Manufacturing focus	Maintain high average utilization rate	Deploy excess buffer capacity and/or use make-to-order	-	Primarily allocate production to suppliers based on their capabilities, quality and flexibility. First orders from Asia. Second orders (fabrics and capacity allocated) and trend products from Europé
Inventory strategy	Generate high turns and minimize inventory throughout the chain	Deploy significant buffer stock of parts or finished goods for the residual uncertainty	-	The retail business model results in all products ordered (through speculation) are stocked by the company
Lead time focus	Shorten lead-time as long as it doesn't increase cost	Invest aggressively in ways to reduce lead-time	-	The overall lead-time is 12 months and the budget set/orders placed 9 months before delivery . European suppliers are used for trend products and second complementary orders to increase flexibility and react to market trends
Approach to chosing suppliers	Select primarily for cost and quality	Select primarily for speed, flexibility, and quality	-	Select for capabilities, quality, CSR, speed, costs and risk. European suppliers are also selcted for speed, increased flexibility and re-orders
Product-design strategy	Maximize performance and minimize cost	Use modular design in order to postpone product differentiation for as long as possible	-	Products are produced for high level of quality and innovation while taking costs into consideration

5.2.4.3 Alignment

Chopra and Meindl's (2004) and Fisher's (1997) theory regarding strategic alignment/fit is mainly based on two key areas: understanding the demand uncertainty as well as the capabilities of the supply chain. The appropriate level of responsiveness or efficiency should be chosen to fit the competitive strategy. Company D's competitive strategy is to sell innovative and high quality fashion apparel at a reasonable price. As company D's retail business model produces products based on speculation and data of historically sales, the company has to deal with the uncertainty themselves thus the level of demand uncertainty is higher than for wholesale. The volume sold consists of

both functional (NOOS) with lower uncertainty and high uncertainty innovative products (season and trend) based on the analysis in section 5.1.4.1. An efficient supply chain is advantageously used for the low uncertainty NOOS concept and first orders of seasonal products and a market responsive strategy for trend and re-orders. However, from the comparison in section 5.1.4.2 it was found that they have elements of both supply chain strategies. The fact that they also had different types of products, some more innovative/trendier and others more functional, would imply that different parts of their supply chain should be more responsive and others more efficient (Fisher, 1997).

When comparing the supply chain with the different supply chain strategies described in section 1.4, two of the product categories, trend and re-orders of seasonal products, are comparable with the one utilized by Zara (section 1.4.2). This due to the shorter planning and production cycle in a combination of that the production mainly is sourced from Europe. First orders of seasonal products are due to the longer planning and production cycle and Asian sourced production, thus more comparable with the one of H&M (section 1.4.3).

When placing company D's three different product categories in the matrix of Fisher (1997) NOOS and first order of seasonal products are placed in the same vertical position, as they use the same supply chain (figure 36). A difference between the two product groups are the classification of functional and innovative based on the comparison in section 5.1.4.1, where seasonal products have more of an innovate character. The trend products and second complementary orders of seasonal products both matching the responsive strategy and innovative product, however trend products have a somewhat shorter lead time and product life cycle than re-orders whereby the position differ. According to the matrix, misalignment is seen for the first orders of seasonal fashion apparel.

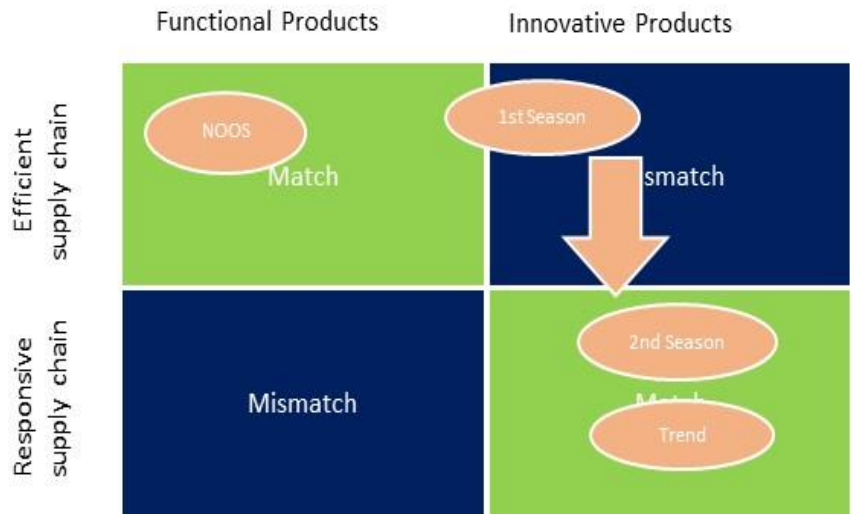


Figure 36: Analyzing the strategic alignment between company D's products and supply chain according to Fisher's (1997) matrix

5.2.5 Company E

Company E's competitive strategy is to sell high quality fashion products with perfect fit through their own concept stores, factory outlets (used to sell previous collections at a reduced price), webshop and wholesale. The company competes within the upper-mid price segment and their main focus and majority of their total sales is within wholesale. The company use a distribution model, which mean that one distributor is responsible for each country of sales. Company E is responsible for the Swedish, Finnish and the UK market, thus the company just handles the financial and inventory risk for their own concept stores, factory outlets and webshop in these geographical markets. The rest is produced based on make-to-order and thereby the risk is shifted towards wholesale and the responsible distributor for each country. Company E thus use both a retail business model as well as a wholesale model.

5.2.5.1 Product characteristics

Company E divides their products in three main product categories; NOOS, season and trend, were all have the same designing and planning process of 12 months. As the main focus in this master thesis has been the division of their men underwear category (section 4.5.3) this will be the object for the analysis. The men underwear is divided in four concepts; basic, core and heritage. The basic concept include recurrent and simpler models mainly sold in multipack. The core concept is the company's main business and largest segment (67%) that include their most well-known models. Heritage on the other hand is somewhat trendier and sold at a higher price compared with the other two mentioned and the focus on NOOS in this segment is extremely

small. The characteristics of these product concepts were compared to Fisher's (1997) theory of a functional and an innovative product (table 18).

As all the products sold through the wholesale and distributor model are produced according to a make-to-order strategy, the demand uncertainty for all these products are low and thus similar to a functional product. However for the remaining volume, sold through their own retail stores and factory outlets in Sweden, Finland and the UK, the demand uncertainty differs between the product groups (the basic, core and heritage) as they are produced according to speculation and historically data. As the basic and core products are recurrent and classic the accuracy of the forecasts are higher than for the heritage. According to the description above the basic and core products are more similar to Fisher's (1997) definition of functional products, and heritage more similar to innovative products.

Basic and core products have a longer life cycle, which is similar to the definition of a functional product, thus they are recurrent. Heritage products have a shorter product life cycle and thus comparable with an innovative product. Regardless if the products are sold through wholesale or own retail the product life cycle is the same. During the interview, the company stated that their products compete with a range of companies producing underwear (from large retail chains to more expensive brands) thus quality and fit of the products are extremely important.

The contribution margin is low for the basic and core models, which indicate functional products. The margin for heritage is set to medium in table 18, which is somewhat in between a functional and an innovative product.

According to the price of the product, the inventory cost for basic and core is less expensive per product and thus cheaper to keep in stock, although core a bit higher compared to basic. However, since these products are produced in large volumes the total cost for inventory is high. This suggests that these products are similar to functional products. Heritage due to its increased complexity and shorter product life cycle are more similar to an innovative product. However the products sold through wholesale and responsible country distributors are considered to have low inventory cost for all concepts as company E doesn't keep them in stock. The company stressed during the interview that some of the inventory is hold by the suppliers directly and thus shifting some of the risk away from the company.

The average stockout rate for company E's own retail is 30%, which implies innovative products.

Basic products are recurrent and simpler models sold in multipack and core products are their well-known models and often recurrent models, thus the volume of these two categorise are higher than for the more complex and seasonal heritage product group. This implies that these two categories are similar to Fisher's (1997) definition of functional products, were basic is somewhat more similar than core. Heritage products, which are more complex and seasonal, are of a more innovative character. Overall the products sold through wholesale are more functional and the same products sold through own retail are slightly more innovative. Worth mentioned is that all product categories have 18 months planning, design and production process, which implies a functional product.

Table 18: Comparing company E's products categories to Fisher's (1997) definition of functional and innovative products

	Functional (Predictable demand)	**Innovative** (Unpredictable	**Basic**		**Core**		**Hertiage**	
			Wholesale	**Own**	**Wholesale**	**Own**	**Wholesale**	**Own**
Demand uncertainty	low	high	Low	low	Low	low	Low	medium
Product life cycle	more than 2 years	3 months to 1 year	> 12 months	> 12 months	< 12 months	< 12 months	3- 6 months	3-6 months
Contribution margin	5% to 20%	20% to 60%	high	high	high	high	medium	medium
Inventory cost	low	high	low	low	low	medium/high	low	medium/high
Average stockout rate	1% to 2%	10% to 40%	PTO	NA	PTO	NA	PTO	NA
Stockout cost	low	high	PTO	NA	PTO	NA	PTO	NA
Volume per SKU	high	low	high	high	high	high	medium	medium
Average forced end-of-season markdown as percentage of price	0%	10% to 25%	PTO	NA	PTO	NA	PTO	NA
Lead time	long	short	Forecast demand 18 months in advance	Forecast demand 18 months in advance	Production cycle of 18 months	Production cycle of 18 months	Production cycle of 18 months	Production cycle of 18 months
Obolence	low	high	low	30% of the volume	low	30% of the volume	low	30% of the volume

5.2.5.2 Supply chain strategy

The interview with company E didn't gave us an exact description of their supply chain strategy. However, the fact that the entire core business concept for men and women recently have been moved to Turkey from Asia due to proximity to the market, gave an indication of lead time and flexibility focus. The company's supply chain was compared to the theory regarding an efficient, a market responsive and an outcome-driven supply chain (Fisher, 1997; Lee, 2002; Melnyk *et al*., 2010).

We experienced that the primary purpose of company E's supply chain was to deliver high quality fashion apparel with excellent fit through reduced lead time and increased flexibility. This can be compared to the outcome-driven supply chain which focuses on a number of factors, where quality and responsiveness are two of the factors (table 19).

The manufacturing focus of company E's supply chain is mainly based on a make-to-orders strategy. The company also has an underlying focus on costs when choosing suppliers, once ensured that these possess "right" capabilities required by the company, thus company E's supply chain is similar to the market responsive.

The inventory strategy of company E is somewhat difficult to compare to the given theory, since their main strategy is focused on wholesale and distributors responsible for a given geographical region, which result in no stock kept by the company and the rest of the volume is based on speculation and estimations.

Company E's lead time focus is similar to a responsive supply chain for its core products as they recently relocated the production from China to Turkey. The reason for moving the production is the reduced transportation lead time from 30 to 11 days (production lead time the same regardless of localization) and increased flexibility, which implies proximity to the market and sample collections faster can be shown in their concept stores and for their distributors. The basic and heritage products are mainly produced in Asia and are thus more of an efficient character.

Company E primarily select suppliers for their specific capabilities to produce its high quality underwear with perfect fit with focus on speed and flexibility (especially for the core concept), which indicate a market responsive strategy. Cost for production is taken in consideration but not as crucial as the other factors mentioned, whereby the efficient strategy is chosen.

Finally, the product-design strategy of company E is matching both a market responsive and a physically efficient supply chain. This due to that they postpone product differentiation as well as maximizing quality and fit of their products while costs is taken into consideration.

The overall comparison of company E's supply chain and the theory regarding the three different supply chain strategies shows that they don't have the exact same as any of the three. Although, the market responsive strategy is the one with the best potential match. The company's net sales and other key figures (table 9) have been relatively stable the past five years with a more significant dip 2013. This can be a result of the Dutch distributor's reorganization, which resulted in the closure of around 20 concept stores, but on the other hand ended in increased sales for their webshop, were Holland today represent the largest geographical market. Another reason can be the takeover of the Finnish market in 2013, which increased the financial and inventory risk for the company and/or the closure of the Chinese market.

Table 19: Comparison of company E's supply chain with theory (Fisher, 1997; Lee, 2003; Melnyk et al., 2010)

	Physically efficient	**Market responsive**	**Outcome-driven**	**Company E**
Primary purpose	Supply predictable demand efficiently at the lowest possible cost	Respond quickly to unpredictable demand in order to minimize stockouts, forced markdown	Strategically coupled and value driven, it should be designed and managed to deliver	Deliver high quality garment products with perfect fit to customers at a predetermined date
Manufacturing focus	Maintain high average utilization rate	Deploy excess buffer capacity and/or use make-to-order	-	Allocate production capacity far in advance (18 months). The entire volume for own retail, wholesale (make-to-order) in Sweden, Finland and the UK, and the other regions (make-to-order) are ordered and manufactured simultainosly
Inventory strategy	Generate high turns and minimize inventory throughout the chain	Deploy significant buffer stock of parts or finished goods for the residual uncertainty	-	The company only stock products for their own concept stores and factory outlets in Sweden, Finland and the UK. The distributor for other regions stock their demanded volume.
Lead-time focus	Shorten lead-time as long as it doesn't increase cost	Invest aggressively in ways to reduce lead-time	-	Orders are placed 5 months in advance and high focus on reducing lead-time
Approach to chosing suppliers	Select primarily for cost and quality	Select primarily for speed, flexibility, and quality	-	Select for capabilities, quality and speed. European suppliers are mainly selcted for speed
Product-design strategy	Maximize performance and minimize cost	Use modular design in order to postpone product differentiation for as long as possible	-	Products are designed either by the company itself or in close cooperation/guidelines from the company, and produced to maximize quality and fit aswell as taking costs into consideration

5.2.5.3 Alignment

Chopra and Meindl's (2004) and Fisher's (1997) theory concerning strategic alignment/fit is mainly based on two main areas: understanding the capabilities of the supply chain as well as the demand uncertainty. The appropriate level of responsiveness or efficiency should be chosen to fit the competitive strategy. Company E's competitive strategy is to sell high quality fashion apparel with the perfect fit at a reasonable price.

Company E uses both a retail business model and a wholesale model. Producing according to a wholesale model means a make-to-order strategy, thus the financial and inventory risk as well as demand uncertainty are handled by the distributor for each geographical region and external retail, which implies an efficient strategy. However, for their own concept stores, factory outlets and webshop in Sweden, Finland and the UK the entire risk is on the company due to volumes produced are based on speculation and historical data, thus implying a responsive strategy. Since the focal sales is in wholesale an overall physically efficient supply chain is advantageously.

When comparing Company E's supply chain with the three different supply chain strategies in section 1.4, heritage is most comparable with H&M's supply chain strategy (section 1.4.2), since the planning and production cycle is long (18 months) and sourced from China. However, the core products is somewhat a combination of H&M' and Zara's supply chain strategies. Core is a functional product with a long planning and production process, which is comparable with the strategy of H&M but on the other hand the entire production of the core business concept has been relocated from China to Turkey recently due to proximity to the market, which is similar to Zara's supply chain strategy for its trend products, except the long cycle and that core is a functional product, thus somewhere in-between.

When placing company E's products in Fisher's (1997) matrix the three product concepts are all positioned differently vertically and horizontally (figure 37). The planning, design and production process is 18 months regardless of concept, which indicate an efficient supply chain strategy. As the main difference lies in the time for transportation, the sourcing process is made differently, were basic and heritage are primarily sourced from Asia and core from Europe, thus makes core to more of a responsive supply chain strategy. The volume sold consists of both functional (basic and core) with lower uncertainty and more of seasonal products (heritage) with somewhat higher uncertainty, based on the analysis in section 5.1.5.1. The basic products match the efficient strategy and functional product. According to the matrix, misalignment is seen for the core concept. The production of core products for men and women have recently been moved to Turkey from Asia

in order to increase flexibility and proximity to the market and reduce lead time, which is similar to a responsive strategy and not an efficient. The more seasonal and complex heritage concept would imply more of an innovative product with a responsive strategy, but since the planning and production cycle is approximately 18 months, the same for all company's products, an efficient supply chain strategy is chosen. The combination of own retail and wholesale forces company E to use different supply chain strategies, which is easier said and done, including serving both the low risk/uncertainty wholesale business well and deal with problems regarding lost sales and markdowns (approximately 30%) in their own retail. The fact that they also have different types of products, some more seasonal (heritage) and others more functional (basic and core), would imply that different parts of their supply chain should be more responsive and others more efficient.

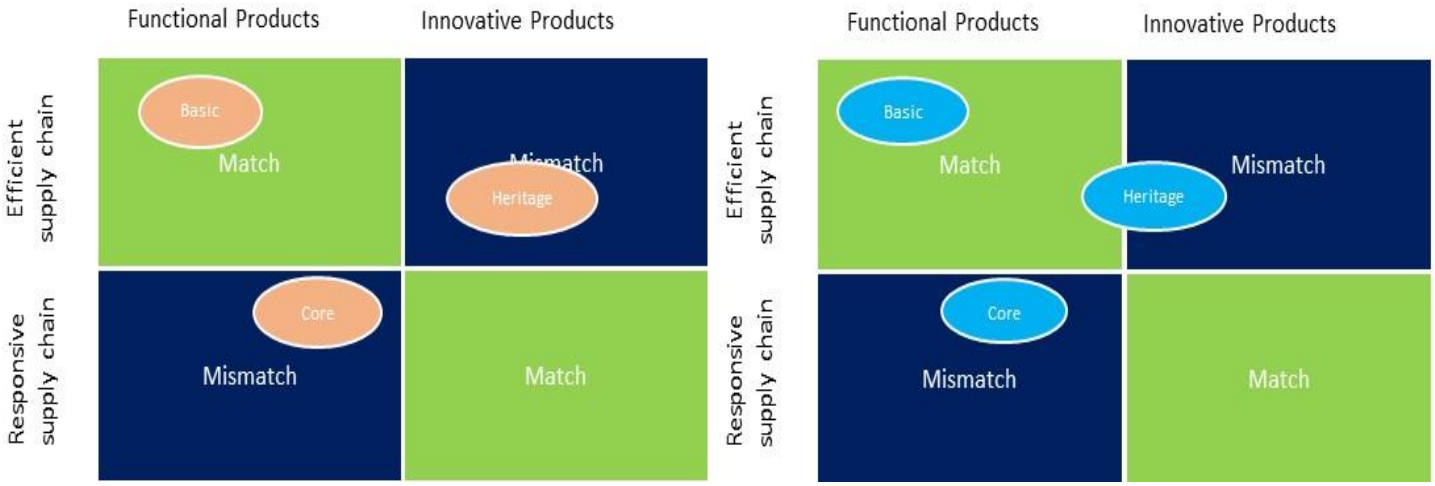


Figure 37: Analyzing the strategic alignment between company D's products and supply chain according to Fisher's (1997) matrix. To the left: Own retail. To the right: Wholesale

5.2.6 Cross-case patterns

When comparing the companies one of the major differences is that fact that company A, B and E's product categories are analyzed for both own retail and wholesale, compared to company C and D who's product categories are only analyzed based on own retail. When analyzing company A, B and E's product groups they tend to be more functional when sold through the wholesale model compared to the own retail. Thus the main aspect of Fisher's (1997) different products categories is the demand uncertainty. When sold through the wholesale model the demand uncertainty is absent and doesn't require the same level of supply chain strategy.

The demand uncertainty and categorization also implies that the companies don't actively need to work with increasing the responsiveness of their supply chains. Thus the conclusion is drawn that the products, with functional

characteristics, sold through the wholesale model are aligned with the physically efficient supply chain.

When the products are sold through own retail, demand gets less predictable and, they become more innovative mainly due to the uncertainty in demand, mark-downs and obsolete products. As the products become more seasonal they also become increasingly innovative, based on the same reasons as above. This pattern can be found in all five companies, including companies A and E who only have approximately 10-20% own retail. Company C and D, who only have their own retail, have acknowledged these categories and splintered (Malik *et al*. 2011) their supply chain to become both physically efficient and market responsive. As Fisher's (1997) theory suggests the responsive part is in place to manage changes in demand and thus reduce the amount of products marked-down and lost sales by focusing on lead time. The efficient part is used in the same way as for the wholesale model focusing on cost and long lead times (Fisher, 1997), however the demand uncertainty is not absent for company C and D but instead it is lower than for the seasonal products. This analysis concludes that company A, B, C and D are striving for supply chains that are theoretically aligned with their products categories. On the other hand when analyzing company E using Fisher's (1997) matrix two out of three product groups have mismatched supply chains. According to the analysis they have too much focus on innovative products and responsive supply chain while primarily using a wholesale business model with low demand uncertainty.

All of the case companies' product categories and supply chain strategies are compared to each other, and to industry leaders Zara and H&M in figure 38. This figure only shows the product sold through own retail. The placement of Zara and H&M is based on the information in chapter 1.4. The two main found patterns are described below the figure.

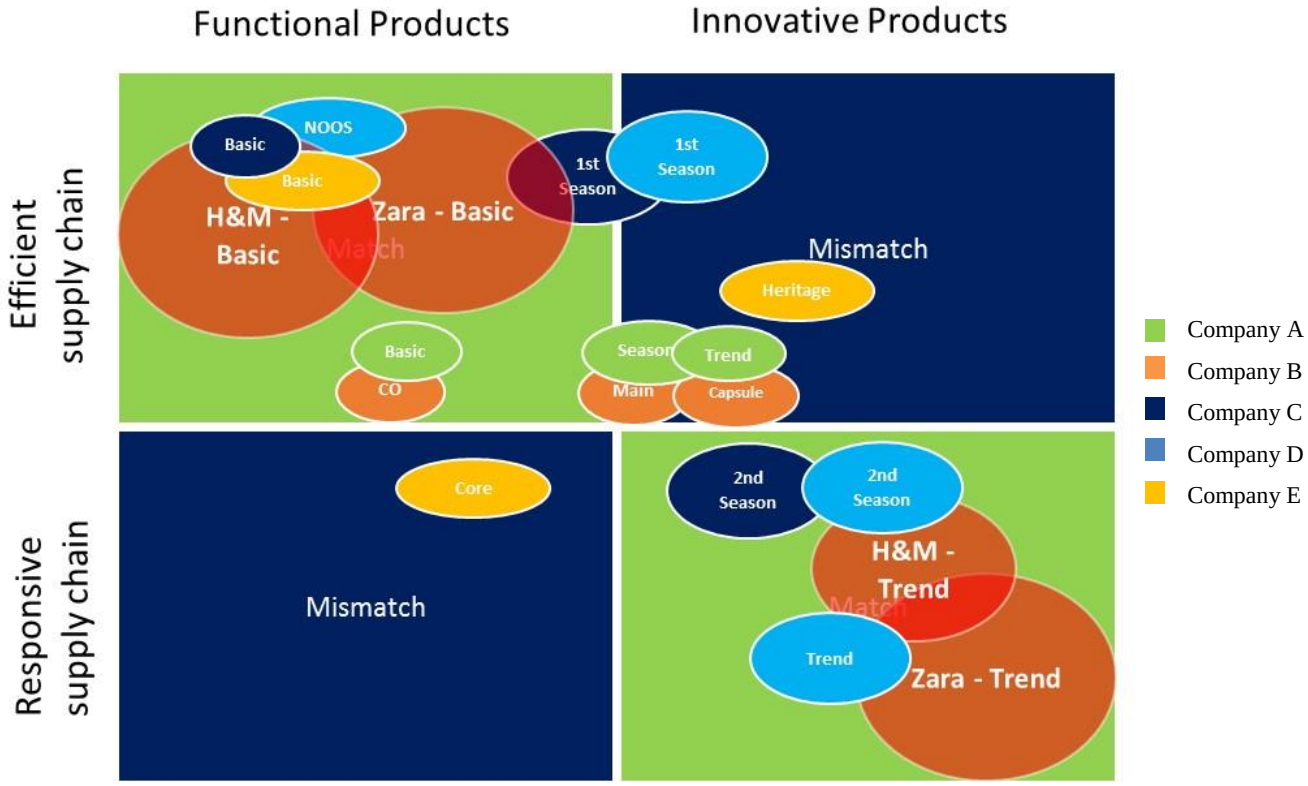


Figure 38: Comparing all product groups to Zara and H&M's products

The patterns found in section 5.1 are that company A and B are similar regarding business model and products groups, which imply the similar supply chain strategy. The supply chain strategy can almost be considered as absent as their supply chains are similar to all three theoretical supply chains. As visualized in figure 38, company A and B are not similar to either Zara or H&M. As previously stated the supply chain strategy is closely coupled to the business model/distribution channels, which differs significantly between company A & B and the industry leaders.

Another pattern found is the similarity between company C and D. Both companies have own retail and have categorized their products in the same way, which has resulted in similar supply chain strategies. These companies are also similar to Zara and H&M regarding how the supply chains are splintered (Malik *et al*. 2011), except the fact that first orders of seasonal products are placed from Asia. Splintering the supply chain and sourcing products differently confirms Leipohaimaukealoha Walsh (2008) theory in chapter 1.3 that the type of product is a key factor when determining location. However compared to H&M and Zara these companies have made very little or no profit the previous years. According to the analysis the companies have to align their product categories and corresponding supply chain strategy. The analysis from Zara and H&M is that “best practice” is achieved when each product group is solely sourced with one focused supply chain strategy.

Company E differ from the two patterns. They have a wider mix of products that are sourced differently. However the company has just begun placing more production in Europe and believes they will only use European suppliers in five years. This decision is based on the fact that the company wants to reduce the lead-time for the products, however the production cycle is still very long which indicates a mismatch with the shorter lead-times from Europe.

5.3 Factors for localization

This section will only include cross-case patterning when analyzing which factors the case companies find important. Each company's view on each factor is explained in the empirical chapter. This section aims to analyze the importance of each factor and its alignment with the analysis from chapter 5.1, in other words the two key areas "Localization of outsourced and offshored production" and "Other factors" from the developed framework. Consequently this section primarily focuses on addressing the research question "*How does the choice of supply chain strategy affect the factors*" and the purpose of the thesis "*Analyze factors Swedish fashion apparel companies find important when locating their outsourced and offshored production globally or locally, and its alignment with their competitive and supply chain strategies*".

5.3.1 Cross-case patterns

In this section there will not be a separate analysis for each case company followed by cross-case patterning. Thus each company's view on each factor is explained in the empirical chapter. Instead this section will only include cross-case patterning. As described in chapter 4 the factors were classified as either primary or secondary based on how much the companies stressed and explained the importance of them. In addition the companies' annual reports and sustainability reports were studied to gain complementary information and confirmation of what factors are important. Each company had 3-4 factors which were top-of-mind and which were stressed more than others, these were categorized as primary, see chapter 4. This two dimensional grading either portrays the factor as primary or secondary, however all factors within a category are most likely not of exact same priority. Below is a compilation of all the case companies and the nine factors from the theoretical framework, table 20. Based on the empirical findings several of these factors were coupled as they often occurred together in the same context.

Table 20: How important the case companies find the different factors

	Capabilities	Quality	CSR	Lead-time	Cost	Tariffs and tax	Exchange rate	Political	Culture
A	Primary	Primary	Primary	Secondary	Primary	Secondary	Secondary	Secondary	Secondary
B	Primary	Primary	Primary	Secondary	Secondary	Secondary	Secondary	Secondary	Secondary
C	Primary	Secondary	Primary	Primary	Primary	Secondary	Secondary	Secondary	Secondary
D	Primary	Primary	Primary	Primary	Primary	Primary	Secondary	Secondary	Secondary
E	Primary	Primary	Secondary	Primary	Secondary	Secondary	Secondary	Secondary	Secondary

5.3.1.1 Capabilities and Quality

As displayed in table 20 and figure 40 each case company found the capabilities of a specific region or supplier as a primary factor when locating outsourced and offshored production. This confirms Hecksher-Ohlin (1933) thoughts that the capabilities/production technologies of a specific country is of high importance. All companies explained the capabilities as the ability to deliver the desired product according to the company's wishes regarding appearance, fit and quality. These aspects are prerequisites for offering a product that customers are willing to buy, regardless of type of company. Company A and B where two of the companies who said their business was dependent on it, as they primarily compete with the design and fit of the clothes. The customers expect these aspects to be in place. These thoughts match Christopher's (2011) thoughts on the demanding customer. All companies besides D stated that production was outsourced to a specific location based on their capabilities, for example company A outsources knitwear to China as they are very at producing that type of product. Once location is decided the supplier has to fulfill a number of criteria. Company D puts more focus on specific suppliers rather than generalizing a location. They argued the capabilities within a country could differ significantly and good suppliers for the same type of product could be found in different locations.

When discussing capabilities with the companies quality was often a factor that was mentioned in the same context. As displayed in figure 39, all companies except C have quality as a primary factor. This shows that the two factors are coupled and that quality is dependent of the capabilities to produce the desired product. Burns and Reismans (2004) theory that quality highly affects the outsourcing decision is confirmed and the findings show that quality is important independent of size or type of product. It is interesting that company C requires a high level of quality for their product but quality is not a factor that decides the location. Quality can instead be considered to be a hygiene factor, which is assumed to be fulfilled by all potential locations they are considering.

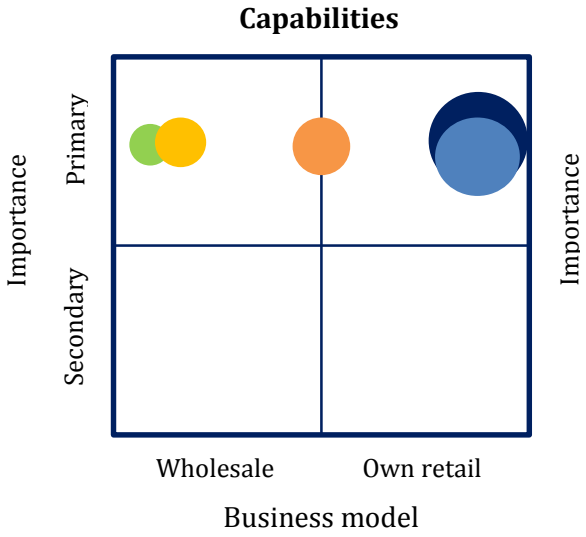


Figure 40: Capability factor

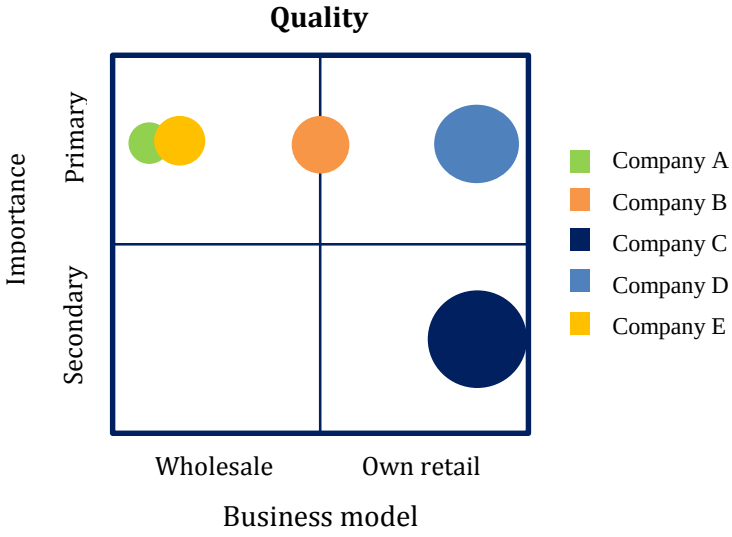


Figure 39: Quality factor

5.3.1.2 CSR

When analyzing the importance of CSR while locating outsourced production four out of five companies had it as a primary factor, figure 41. Company E consider CSR to be a secondary factor and thus don't have more CSR initiatives than required. However, in the future they have an ambition to increase their CSR initiatives but it will never become the primary focus.

CSR highly affected company A, B, C and D's decision when selecting location for outsourced production. There are a number of aspects behind the decision that are similar to Fang *et al.*, (2010) and Van Weele (2010) theory regarding CSR. The companies' want to be responsible towards the society and environment and thus their reputation is dependent on the countries that production is located in. This can be compared to the collapse of the Rana

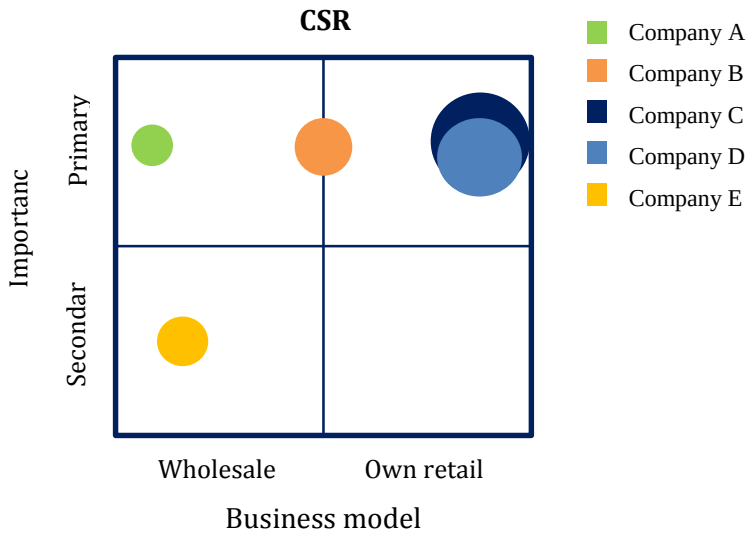


Figure 41: CSR factor

Plaza clothing factory in Bangladesh as described in chapter 1.1, where several large European and American apparel companies did not take responsibility and thus affected their reputation. These four companies also discussed CSR from a customer perspective, as an increasingly amount of their customer require a high level of CSR initiatives. Company C and D are two companies who have experienced competitive advantages following their CSR initiatives. As the United Nations Industrial Development Organization (2014) explains CSR increases brand image and value. Regardless of size or business model there has to be an attractiveness to the brand in order for customer to buy the products (Christopher, 2011). Thus both the smaller companies (A and B) and the larger companies (C and D) work with CSR as it is becoming more important in order to be attractive on the market.

5.3.1.3 Lead time

Lead time is one of two factors which is most widespread among the companies. Lead time is a secondary factor for company A and B, and a primary factor for company C, D and E, figure 42. From the analysis in chapter 5.1 it was found that the main difference between the two smaller companies (A and B) and the two larger companies (C and D) are their business models and consequently their supply chains. Company A and B have more cost efficient supply chain and do not focus on lead time. Company C, D and E on the other hand have more responsive supply chains, for parts of the product assortment, and use shorter lead time for second order to respond to the market and customers.

The reason why company C, D and E find lead time very important can be found in Carter and Kaufmann's (2002) theory. As described in chapter 3.2.5.3 they explain that the lead time of a product has a direct effect on both cost and customer satisfaction. Long lead times lock up inventory and results in higher capital costs. The long lead time also implies a slower response to market trends and customer demand. All of these aspects: response to market trends, inventory and capital costs, especially affect company C and D who have their own retail. From the analysis in chapter 5.1 these were the aspects to why they placed second orders in Europe. This analysis would imply that company B, who has 50 % own retail, should also find lead time important. However they believe it is the same recurrent customer who buys their products and therefore the demand is rather stable. Company E is the company that does not fall into this pattern, approximately 80% of their products are sold through wholesale. Meaning lead time would not have to be a primary factor for them. According to this analysis the importance of lead time is dependent on the business model and who bears the risk in the supply chain.

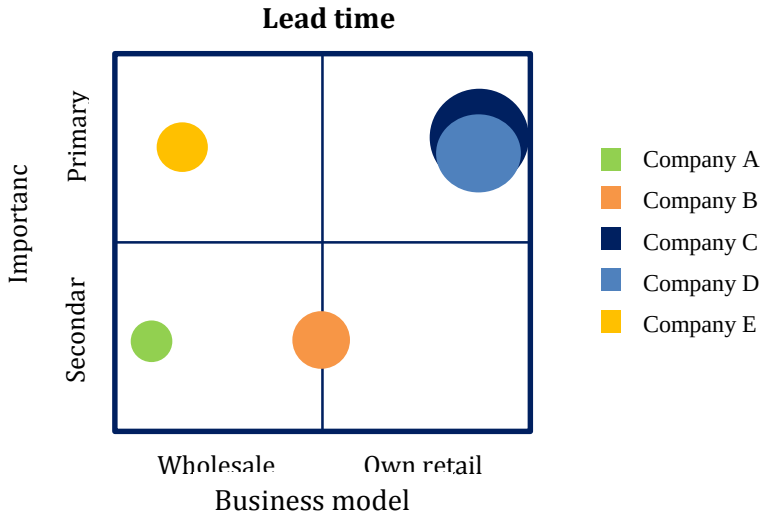


Figure 42: Lead time factor

5.3.1.4 Cost

As discussed in the previous section cost and lead time are directly coupled (Carter and Kaufmann 2002, Xiao and Jin 2011). This is visualized in figure 43 as this is the other factor which is most widespread among the companies. Company B and E have cost as a secondary factor, and company A, C and D have cost as primary. Company C and D were also two of three companies who had lead time as a primary factor.

The analyses in chapter 5.1 showed that company C and D's supply chains can be divided into both a cost-efficient flow and a responsive flow. The cost efficient flow is used for basic products and first orders of seasonal products. When outsourcing this production cost is a factor which they take into consideration. For example company C tries to place all first orders from Asia to minimize costs. Their cost-focus can be seen in the fact company C and D are the only two case companies who have been or are active in Bangladesh. As discussed in the lead time section the inventory cost and cost of obsolete products are an aspect which affect company C and D who bear the risk themselves. Compared to company B and E who have 80-90% wholesale, where the products have already been sold and thus they don't have to focus on minimizing the inventory value thus they are not affected by obsolete products. However if they were to increase the amount of own retail they would have to look over their supply chains as discussed earlier. Company A has cost as a primary factor, the reasons behind is likely the difficult and time consuming process of producing knitwear which is their largest product group. They have to take cost into consideration to avoid their knitwear of becoming too expensive for their customers to purchase.

This analysis shows that the cost factor is affected by the supply chain strategy, which in turn is affected by the size and business model of a company as concluded in chapter 5.1. This analysis should not be affected by the fact that companies C and D are "bigger" and thus comparable to Zara and H&M who compete with price. Company C and D do not compete with a low price and thus the cost factor is not solely motivated by minimizing price.

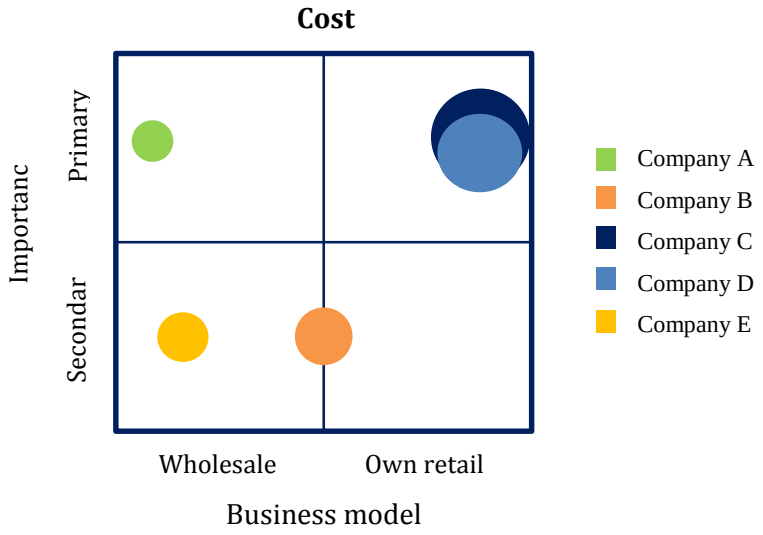


Figure 43: Cost factor

5.3.1.5 Tariffs & tax and exchange rate

Tariffs, tax and exchange rate are two of the factors that four or more companies have as secondary factors. These findings differ from Chopra and Meindl's (2004) thoughts that these factors are highly important. Following the empirical findings all companies took these factors into consideration when conducting preliminary calculations to form an idea of the costs of a product. Company D was the only company that expressed the importance of tariffs and taxes and said they deliberately located production based on tariffs benefits, for example in Pakistan where there are no tariffs when buying from EU. This is an aspect that Chopra and Meindl (2004) discussed which countries offer to attract business. Based on the analysis in chapter 5.1.4 company D only has own retail and thus bears the risk themselves. They therefore had a more cost efficient supply chain to minimize costs of inventory and mark-downs, reducing tariff costs is a part of that strategy. As displayed in table 20 cost is a primary factor for company D, this is further analyzed later in this chapter. Companies A, B and D all have 50-90% wholesale and thus don't focus on tariffs and taxes as they don't bear the risk of the inventory.

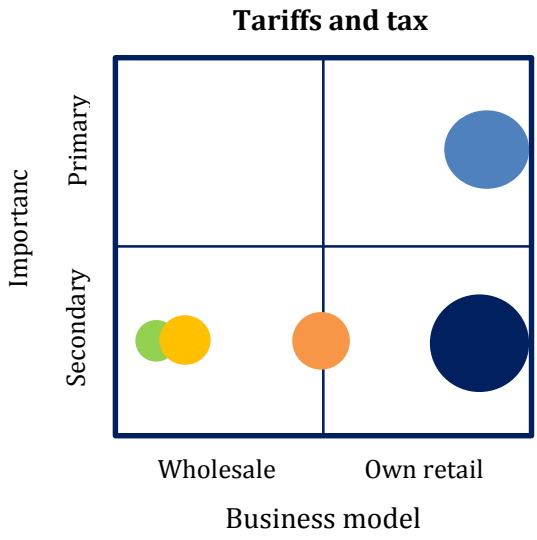


Figure 44: Tariffs and tax factor

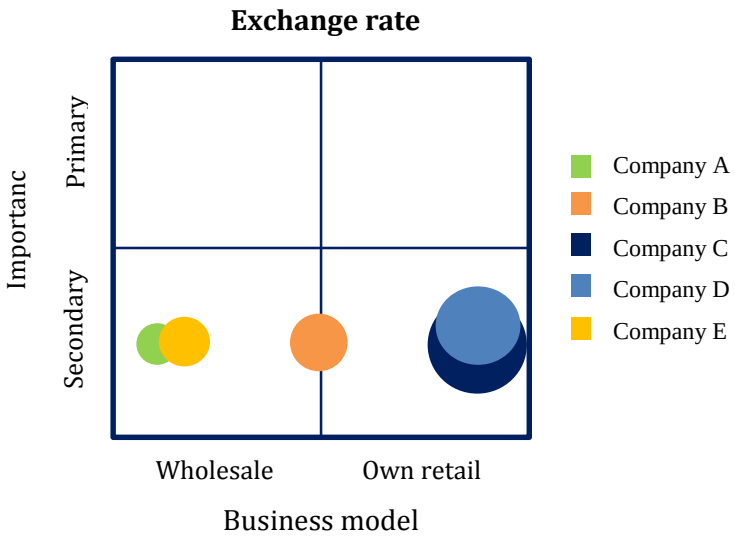


Figure 45: Exchange rate factor

5.3.1.6 Politics and culture

Politics and culture are two factors that are secondary for all of the companies. According to figures 46 and 47 these factors are not dependent of size or business model. Similar to tariffs, tax and exchange rate these factors are taken into consideration when conducting business cases.

Based on the empirical findings politics can be considered to be a hygiene factor. As company A expressed, they wouldn't consider locating outsourced production in a country with political instability. For example they wouldn't choose Ukraine which was very unsettled during the spring of 2014 when the interview with company A was conducted. These finding confirm Chopra and Meindl's (2004) thoughts that political stability affects the location of production. As four out of five companies have CSR as primary factor it is likely that political stability is a hygiene factor for them thus political stability makes for a more sophisticated and developed legal system that enhances CSR initiatives (Chopra and Meindl, 2004). The companies explained that they have experienced cultural differences between Sweden and European and Asian countries. However it does not affect the selected location as Schniederjans and Zuckerwieler (2004) suggests it can. Other factors prevail and cultural differences are just something they have to work with. Company D explained it is very different to do business in China, Pakistan and Bangladesh, and thus the different countries have to be managed different. They also explained that the company has to be "big" in some countries to do business, which in this master thesis should imply that company C and D had culture as a primary factor.

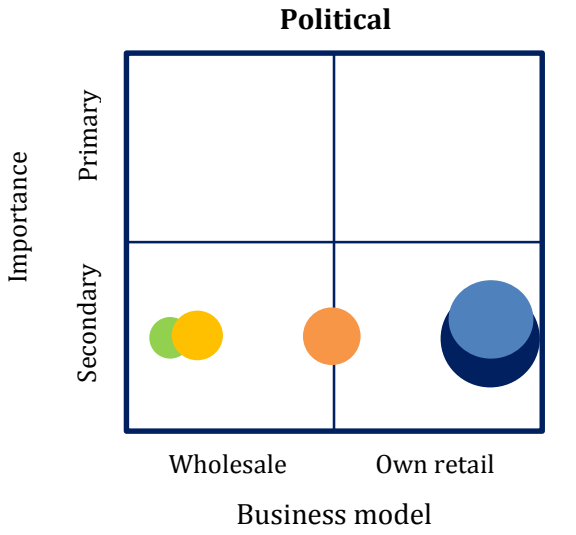


Figure 47: Political factor

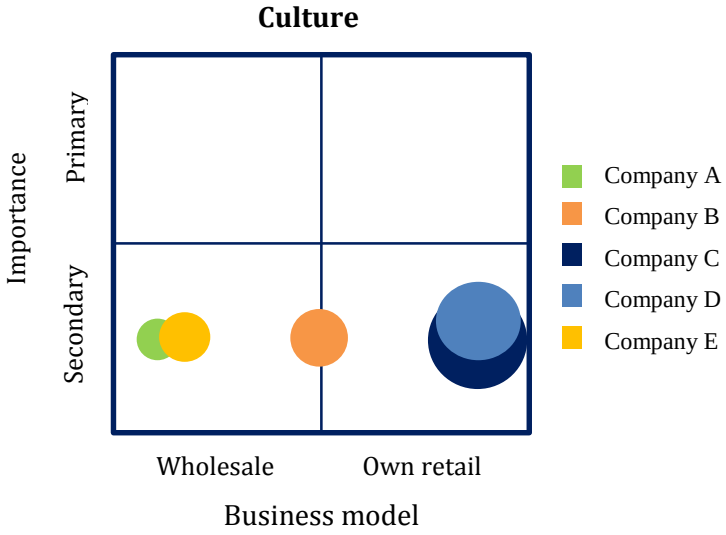


Figure 46: Culture factor

5.3.1.7 Summary

No analysis was conducted to analyze the difference between factors when locating production in Europe and Asia. Based on the empirical findings the case companies found the same factors important regardless if production is located in Europe or Asia. The same factors have to be in place to ensure the same high level of quality, fit, CSR, functionality etc. However, the difference between Europe and Asia is the amount of time and resources the companies need to allocate to ensure this high level. For example all case companies stated that suppliers with the same level of CSR can be found in Asia as in Europe, however they have to monitor and work closer with the Asian suppliers. This is also an aspect that all companies expressed in more dependent of specific suppliers rather than location.

For all factors besides lead time and costs the five case companies are rather similar. Rather meaning that four or all five companies have the same opinion and classify the factor as either primary or secondary. Cost and lead time were the two factors where a difference among the companies was found, where three companies considered the factors to be primary and two companies considered the factors to be secondary. Company C and D were two of the three companies. This is the same pattern that was found in chapter 5.1, company C and D differ from the others. This pattern also matches with the fact that the analysis in 5.1 concluded that company C and D both have an efficient and responsive supply chain, and thus find both cost and lead time important. As the size of a company increases they move towards more own retail. Company C and D who are large compared to the other case companies take larger risk with their own retail and have more likely evolved their supply chain strategies further.

All of the case companies and each of their product groups are visualized in figure 48, regarding the importance of cost and lead time. According to the analysis in chapter 5.1.6, company C and D were the two companies whose products were most aligned with their supply chains. This classification of products can be compared to McKinsey's theory regarding splintering the supply chain, where products are classified based on volume and volatility and consequently sourced differently (Malik *et al*., 2011). Company C's and D's attempt to divide/splinter their supply chain shows a level of majority and that they have acknowledge the different characteristics and needs of each product. As company A, B and E are increasing their amount of own retail they will most likely have to become more aware of their supply chain strategies and thus the importance of cost and lead time will increase. This analysis shows that the overall purpose of a supply chain strategy, being efficient or responsive, affects how important a factor is when locating production and thus answers the research question "*How does the choice of supply chain strategy affect the factors*".

Interestingly company B, which has 50% own retail and 50% wholesale, doesn't find any of these factors important for neither of the product categories. The explanation is likely found in their ad-hoc and lacking demand forecasting, and the one-size-fits-all supply chain strategy that is used for both wholesale and own retail.

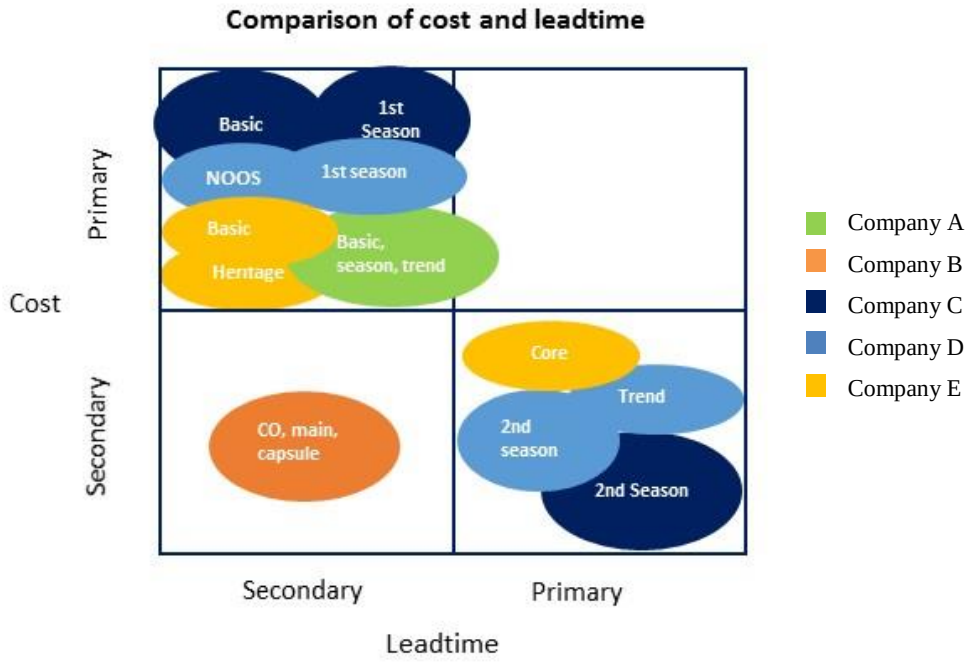


Figure 48: Comparison of the importance of cost and lead time for each product group

Chapter 5.2 shows that the size and supply chain of the company influences the importance of cost and lead time when locating outsourced and offshored production. The other more "soft" factors are not affected by size or supply chain strategy.

5.4 Development in LCC

This section aims to answer the following research question: "*How has the development in LCC affected Swedish apparel companies' choice of locating production?"*

All five Swedish fashion apparel companies participating in this master thesis study, mentioned in their conducted interviews that they have noticed significant changes in costs in China the previous years. As all of the case companies have production located in China, and in some degree they have all been affected by the increased wages in some extend. Also the CSR and control efforts for the companies producing in Asia is larger than for Europe due to e.g. turbulence with collapsed facilities and poorer existing working conditions. This has resulted in increased costs compared to Europe were standards are often higher.

One common topic during the interviews was the level of suppliers existing within LCC. China is mainly thought of as a low cost and/or low quality producing country but this is not the entire truth according to the case companies. They argue that all types of suppliers can be found within the country, from low cost producers to high technology ones, which is also the case in Europe. The difference is that the proportion of high-quality suppliers may be a bit larger in Europe compared to Asia. The respondents stressed that they don't chose a specific country for production, since the level differs notably, they chose suppliers with the "right" capabilities. As all companies in the study requires high standards and capabilities of their suppliers producing their products, the number of suppliers available in LCC are thus limited. The suppliers that fulfill the standards set by the companies are thus sought after on the market and the cost for production is often more expensive, thus the cost difference between Asia and Europe in this supplier segment isn't as significant. This is one main reason why company C, D and E have relocated some of their production to Europe. This has increased proximity to the market and reduced the overall lead time. The benefits thus outweigh the small cost difference still existing between LCCs in Europe and Asia. This conclusion can be compared to the importance of cost, lead time and quality in the previous chapter. The cost difference between high-quality suppliers in Asia and Europe is decreasing, and shorter lead times come with European suppliers.

For two of the companies, A and B, the selection of suppliers are a bit different regarding localization. Even though they noticed significant changes in costs for their production in China, re-localization haven't been feasible due to the specific capabilities and technologies needed for the production. Company A has product categories were the specific knowledge, capabilities and technologies in China is crucial for the production (e.g. knitted) and thus not able to swap suppliers even though it would be preferable in a cost perspective. The solution has instead been to reduce the amount of details and fabrics for their production to keep costs down. Company B experience the same problem as company A for some of their product categories were they depend on region-specific capabilities and knowledge, thus not able to swap supplier in the same extend. Although, for product categories were capabilities and technologies needed can be found in different regions, the decision is based on comparison of costs, lead time and suitability for the production. Thus the less minor differences in costs between LCC in Asia and Europe, have resulted in that more and more production is moved back to Europe with benefits as reduced time to market as a consequence. This is mainly seen in three of the case companies (C,D,E). Company C and D both uses suppliers in Europe for their trend products and second complementary orders of seasonal products due to reduced lead time and thus able to faster react to trends in the market. Company E has recently moved their entire core business concept for men and women to Turkey from China due to reduced time for transportation as well as proximity to the market. All three companies stress that the benefits with the re-localization outweigh the small difference in costs and reduces the markdown rate for these product segments.

Another consequence of the increased wages and expenses in China is that more fashion apparel companies are looking for other alternative regions than Europe for relocating production. LCC in other parts of Asia such as Vietnam and Bangladesh are now relevant alternatives as their capabilities and technologies are improving. Also countries in Africa are becoming production options since production and labor costs is significantly lower, however the level of capabilities is although inferior. During the conducted interviews the alternative to move current production from China to other LCC in Asia and/or Africa was mentioned but not applicable at the moment. Thus the case companies are minor clients with relatively small volumes and are thus waiting for major players in the market to establish well-functioning manufacturing operations first. Company A expressed that they use this tactic and follow industry leaders.

The overall conclusion is that all companies in the study are now reviewing alternatives for their current production in China in some extend because of

the enhanced costs for production and labor. Both company B and E believe that their production in China will be phased out in 3 to 5 years and the other three case companies believe that more of their Asian production will be relocated to Europe in the future. Thus, the development in LCC has started to affect Swedish fashion apparel companies' production localization, were some have already taken action and the rest have future plans to do the same. The less significant cost difference between Asia and Europe is one main reason for the increased attractiveness for production in Europe. As seen in the analysis in section 5.2, company C,D and E have supply chain strategies that are shifting towards more of a market responsive strategy due to that more production is relocated from Asia to Europe in order to gain proximity to the market. Thus, it is several reasons for why the re-localization has increased or will do in the future for Swedish fashion apparel companies were none is solely crucial, instead it is the combination of these that together affect the decision.

5.5 Concluding discussions

When comparing the factors between the companies the same patterns were found as when comparing the alignment between their competitive strategies and supply chain strategies. The importance of different factors also confirmed the analyzed supply chain strategies in chapter 5.1, as the factors matched the important characteristics of the strategies.

Overall the companies focusing on wholesale are using the more traditional fashion apparel supply chain strategy discussed in chapter 1.3, where products with short life cycles are sourced with long lead times. However as the demand uncertainty is absent when using wholesale the lack of an explicit supply chain strategy works. These companies don't have to manage the increasingly demanding customer as Christopher (2011) explains.

The larger studied companies don't explicitly follow any of the supply chain strategies in chapter 1.4. However their supply chain strategies are becoming increasingly similar to the quick response strategy and Zara's strategy, as they are now focusing on locating more production in Europe to reduce lead times and react faster to shifts in demand and market trends. However they will most likely not focus on launching products in the extremely short time as Zara does, due to their mere size compared to Zara.

All companies have experienced the development in China, were three have already taken action and relocated production to Europe, which generated proximity to the market and the possibility to quicker react to trends in the market. Overall the companies believe that their production in China

gradually will be phased out and thus looking at alternative production locations in either Europe or other parts of Asia for the future.

6. Discussion/Conclusion

In this chapter the key areas of the developed model are discussed by extracting and summarizing finding from the analysis, which culminates into answers to the research question and purpose of the thesis. Finally suggestions for further research within the field is presented along with the authors' personal reflections regarding the thesis.

6.1 General conclusions

The first part of the analysis showed that using the theory regarding different product categories and alignment with supply chain strategy was good to distinguish the companies and find patterns. When concluding the analysis it was evident that **the business model, in terms of distribution channel, was the main aspect behind the supply chain strategy and its alignment with the competitive strategy**. Using a wholesale model removes the risk of demand uncertainty and less effort is needed from the company to enhance the capabilities of the supply chain. However, the smaller companies are increasing the amount of own retail which implies more risk and thus more alignment is needed.

Further the analysis in chapter 5.2 showed that **all companies categorize their products, primarily based on demand uncertainty and product life-time**. Recurring names were: basic products, seasonal products and trend products. These names are comparable to the names mentioned in chapter 1.3: basic, fashion-basic, and fashion/trend. Products become more innovative when the degree of seasonality increases. The larger companies, who have their own retail, are beginning to splinter their supply chains into two flows. **A slower more cost-efficient flow for basic recurrent products and a faster more flexible flow**, primarily for **second orders of seasonal products and trend products**. Further the analysis also concluded that the companies with own retail have to bear the risk themselves and thus have to manage the risk of markdowns and stockouts/lost sales. Splintering the supply chain is theoretically a good way of managing this risk.

The analysis in chapter 5.3 showed that **the majority of the companies found factors important which are aligned with their competitive and supply chain strategy**. The **larger companies with splintered supply chains, that are both efficient and responsive, found the cost and lead time factor important**. As displayed in figure 48 the cost factor is of primary important for the physically efficient flow and the lead time factor is important for the market responsive flow of the larger companies, this confirms Fisher's (1997) theory regarding cost and speed as the main

differences. Basically cost and lead time were the two factors that differentiated the large companies from the smaller companies. Further, the remaining seven factors: *capabilities, quality, CSR, tariffs and tax, exchange rate, culture, and political*, were similar regardless of size or business model. Most likely because they are "softer" or because the Swedish companies reason in the same way. **Four or more companies found CSR, quality and capabilities important when locating production**. The empirical findings confirmed that CSR is an emerging trend and very important for the companies when locating production. Primarily as the companies want to take responsibility and maintain a good reputation to attract customers. Quality and capabilities are necessary to produce a product which will compete and attract customers.

From the empirical findings it was concluded that **the same factors are important when locating production in Europe and Asia**. This is presumably done in an effort to standardize the type of production used to ensure the same level of quality, fit, CSR etc. regardless of location. However, when generalizing it can be more time-consuming and require more resources to ensure production in Asia than Europe.

From the empirical findings and analysis in chapter 5.4 it was found that development in LCC does not function as a factor itself. Instead it sets the trend among companies were location of outsourced and offshored production is heading. Following the analysis in section 5.3 all case companies have experienced that the difference in costs between especially China and Europe has decreased. In combination with the benefits of proximity to the market and reduced overall lead time to better align the market responsive part of their supply chains, the case companies find Europe increasingly attractive. The smaller companies also locate production in Europe primarily to access special capabilities, but also as the cost difference is decreasing. From the analysis **it is not evident whether or not the size of the company, or the business model, affects the decision when selecting between Asia and Europe**. It can be seen that the **companies are taking advantage of the decreasing cost difference and placing production in Europe to increase flexibility and speed**. Company D which is one of the larger companies has also located production in cheaper countries in Asia, such as Bangladesh, to reduce cost. The placement in Bangladesh confirms the cost efficient flow of their splintered supply chain.

Based on the previous conclusions the developed framework is considered to answer the research questions and thereby fulfil the stated purpose. However it was difficult to analyze the difference in factors when locating production in Europe and Asia with the framework. Also a number of aspects affected

each other, such as the development in LCC, difference in factors between Europe and Asian, and the empirical response to the cost and lead time factor as their often was a comparison between Europe and Asia in those answers.

6.2 Suggestions for futher research

The research was performed during a limited period of 20 weeks and the number of participating case companies in the study was rather small. In combination with the fact that the companies' size, business model and product mix varied considerably made it difficult to generalize the conclusions. This implies that additional action and research can be done within the area for further in-depth analyzes and generalizations. The authors' have two main proposals for further research which could increase the degree of generalization within the fashion apparel industry. The further research suggested is based on the developed framework and investigation that have been performed in this master thesis.

- Since the study performed in this master thesis has been qualitative, including a limited number of five fashion apparel companies, a complementary quantitative research is preferable. The authors' suggestion is to improve and enlarge the performed research by using the developed framework to conduct a survey. The survey could then be responded by a wide range of companies within the industry, which would give a complementary quantitative perspective, thus more generalization can be drawn. The survey could be used to test the following hypotheses:

    - "*Larger companies with own retail splinter their supply chains into a slower cost efficient flow and a faster responsive flow"*
    - *"The cost and lead time factors are the two factor that primarily differentiate larger and smaller companies when locating production"*
    - *"Europe is becoming increasingly attractive to locate production in following the development in Asian LCC"*

- Another field for further investigations is cost breakdowns. In this study the cost aspect is not thoroughly researched since this data is confidential and/or the case companies find it difficult to extract it. However, more comprehensive cost breakdowns between different countries of fashion apparel production, as well as for different types of garments, would enable general conclusions about where certain fashion apparel products most optimally should be produced for Swedish fashion apparel companies.

- An interesting aspect would be to further include that location of the supplier's supplier as several of the case companies mentioned this is an aspect they are putting more and more focus on. This is primarily from a CSR perspective to ensure the entire supply chain is working with sustainability.

6.3 Theoretical contribution

The first part of the analysis has touched upon an area that has already been researched rather extensive. Research regarding supply chain strategies in the fashion apparel industry has increased with the comparison of Zara and H&M. The quick response research done in 1994 confirms this. This thesis has instead shed light on what factors are important when locating production in Europe or Asia depending on competitive and supply chain strategy. The thesis is built around Chopra and Meindl's (2004) existing theory regarding localization of production, but other factors and aspects that the authors and Deloitte find interesting have been added. The thesis concluded that the other factors such as CSR has become very important.

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Company B; Supply Chain Director, [2014-04-01]

Company C; Supply Chain Manager, [2014-04-03]

Company D; CEO and Supply Chain Director, [2014-04-11]

Company E; Business Controller and Product- and Design Manager, [2014-04-28]

Fredriksson, Anna; Researcher in logistics at Chalmers University, [2014-02-13]

Lindgren, Björn; Regional Manager at Svenskt Näringsliv, [2014-03-18]

Liu, Ju; Researcher in innovation at Lund University, [2014-03-05]

Svensson, Lasse; CEO/Owner at Nordiska Etikettbolaget, [2014-02-11]

Appendix

Appendix A - Interview guide

- Presentation of the master thesis' purpose, our educational background and Deloitte

Initial discussion

1. We have decided that all the case companies in our study will be anonymous, is this mutual from your side?
2. Describe your general operations
    a. Customer segments
    b. Geographic market
    c. Product portfolio and categories
    d. Business model
    e. Strategic focus
3. Explain/describe your value chain?

Suppliers

4. Describe your supplier base?
    a. Who are your suppliers
    b. Number of suppliers
    c. Where are the suppliers located
5. What are your selection criteria when selecting suppliers?
6. Do you take the geographic localization into account
    a. Local (Europe)
    b. Global (LCC in Asia)
    c. Other geographical areas
    d. What are the most characteristic differences between the two abovementioned (local and global) when selecting location of suppliers?
7. Where is your production located at present?
    a. Number of production facilities?
    b. Do the production facilities differ in main functions/role? If so, how?

Supply Chain Strategy

8. Do you categorize your products on the basis of recurrent and season?
    a. How is the categorization performed?
    b. Concrete examples?
    c. Existing data (product lifecycle, marginal, stockout rate, markdowns)
9. Are your overall strategy broken down to:
    a. Product strategy?
    b. Logistic strategy?
10. Do you have a stated strategy for each product category (recurrent and season)?
11. Are your logistic strategy linked to the overall strategy?
    a. Connection between logistic and product strategy?
    b. Exemplify?
12. Is the logistic strategy lead time and/or cost-focused based on product strategy?
    a. Does your supply chain elements of both of these in some form?
13. When deciding supplier location, do you take the following factors into account:
    a. Availability of suppliers?
    b. Market trends?
    c. Variation of customer demand?
14. In literature there are recurring factors affecting choice of value chain and location of suppliers. What's your reflection on these?
    a. Volume purchased per batch / round?
    b. Does the size of your organization affect the choice of supplier and your negotiating authority?

c. Do you use geographically diverse suppliers for different collections throughout the year?
d. Do you use inventory as a form of protection against fluctuations in demand?
e. The time customers are willing to wait for a specific product?
f. Variation in your product assortment?
g. Level of service required?
h. Price of product?
i. Level of innovation for products?

15. Do you use your logistics strategy as a way to differentiate from competitors?
16. Do you see any needs for changes in logistics and product strategy in the future?
    a. The drivers

Factors

Strategic

17. How does the overall strategy affect your choice of suppliers?
18. Given your supplier base and its current location, what are the advantages and disadvantages of being positioned there?
19. Har ni lokaliserat produktionsenheter för olika syften?
20. Have you located the production facilities for different purposes?
    a. Only in a cost perspective
    b. Serving the local market and its specific requirements
    c. Only for acquiring local specific knowledge and/or skills
21. What are the main factors and/or risks in the selection process of supplier localization? (e.g. IPR)

Technology

22. How much influence does technology have on the choice of production and suppliers?
    a. Manual
    b. Automated
23. Does the technology differ depending on type of product?
    a. Recurrent
    b. Season
24. Do you have specifications of requirements for your suppliers regarding choice of technology for increased flexibility?

Quality

25. Does the quality aspect affect the way you design and locate your supplier?
26. Do you experience any differences in quality between your different production locations? If so, how and to what degree? Also:
    a. Local (Europe)
    b. Global (Asia)
27. Have you experienced difference in quality and enlarged risk with increased distance of transportation?
    a. Transportation lead time
    b. Production
    c. Costs

Macroeconomic

28. When selecting supplier location, how important are:
    a. Taxes?
    b. Tariffs?
    c. Exchange rates between countries?
29. Have you noticed any changes in abovementioned points, if so, how and to what degree? Have you changes your purchasing strategy due to that?
30. Have you based any purchasing decisions on favorable tax rates and/or free trade zones?

Political

31. Do you have different supplier strategies depending on political strategies?

Lead time

32. How much influence has the lead time on your respective products?

33. How much effort do you put on lead time for sourcing decisions?
34. Have you consciously chosen suppliers from a country to reduce lead times?
35. What is the average lead time for each product type?
36. How long is the cycle time from design to store?
    a. Recurrent assortment
    b. Trend/season

CSR

37. How much effort do you put on your CSR work and what do you within the area?
38. Do your CSR efforts affect your overall strategy?
39. How do your CSR efforts affect your:
    a. Supplier location
    b. Supply chain
40. Has increased CSR awareness influenced your supplier selection in low-cost countries?
41. Have you noticed any positive effects, such as competitive advantage, as a result of your rendered CSR work?

Culture

42. Which cultural aspects influence the choice of supplier localization?
43. Is it more difficult to control existing suppliers if they are located globally or locally? If so, how?

Shipping

44. Which means of transportation do you use at present?
45. Does the lead time affect your choice of shipping method?
46. Does the increased price of oil affect your choice of:
    a. Shipping method?
    b. Localization of production?

Costs

47. What are the main costs for your operations including shipping?
    a. Direct
    b. Indirect
48. Which of the cost structure' factors are for you modifiable?
    a. Existing data available?
    b. Switching supplier from global to local?
49. We have identified a number of key parameters for costs, can you relate to these?
50. a related logistics (transport and storage)
    a. Logistic related (transport and inventory)
    b. Labor cost (fabric → finished garments)
    c. Raw materials and material (fabrics, buttons and thread)
51. How do these parameters depending on geographic location? Do you have available data?
    a. Global (Asia)
    b. Local (Europe)
52. How have these changed over the years?
    a. Has this affected your supplier location decisions?
53. How does the cost structure of a product produced in a cost-focused value chain and one produced in a Lead-focused value chain differ?

Final

54. Are there any other factors that you find important when selecting supplier?

Appendix B – Array for analysis

	Theory	**Empirical findings**
Phase 1 – Supply chain strategy: -Type of competitive strategy -Supply chain strategy - Strategic fit / alignment		
Categorizing products: How are products categorized? - Functional - Innovative Do the different product categories have different supply chain strategies?		
Factors influencing location of suppliers for the different supply chains: - Strategic - Technical - Macroeconomic - CSR - Lead time - Culture - Quality		